ISSUED EVERY MONDAY AT 450 W. FORT ST., DETROIT 26, MICHIGAN. ESTABLISHED 1926.

AIR CONDITIONING & REFRIGERATION News

THE NEWSPAPER OF THE INDUSTRY

Vol. 69, No. 2, Serial No. 1260 | May 11, 1953 | Subscription Price, $5 Per Year

Reentered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879.
Trade Mark Registered U. S. Patent Office. Copyright 1953, by Business News Publishing Co.

INSIDE DOPE

by GEORGE F. TAUBENECK

Stories of the Week
Gags of the Week
General Douglas MacArthur Can Unlax, Too
How Observant Are We?
Out of Our Mailbag
Oh, No! Department

Stories of the Week

Grampaw Taubeneck bought a Missouri mule one time. Sad deal. Couldn't get the animule to gee-haw, whoa, or anything. So he hired a Professional Mule Trainer.

First thing the latter did was whap Gramps' mule over the head with a two-by-four. The mule didn't budge. Trainer whacked him again, and harder, with his murderous bludgeon.

"Hey," protested Grampaw. "Air ye aimin' to kill my mule?"

"Guess you don't know nuthin' about trainin' Missouri mules," condescended the Pro. "First off, you gotta get their attention."

"Last May 14," a presumably bereaved widow wrote an insurance firm, "my husband took out a $10,000 policy. He died all of sudden August 13.

"In my opinion life insurance is a good investment."

Gags of the Week

Spring is the season when an otherwise rational man schemes to make grass grow so he'll have to sweat keeping it cut all summer.—*Cincinnati Enquirer.*

No matter what side of an argument a man gets on, he always finds some people with him he wishes were on the other side.—*Jascha Heifetz.*

General Douglas MacArthur Can Unlax, Too

Are you curious about international celebrities? Get a thrill out of brushing star-dust off your shoulders?

Local yokel "Dope" does. And, around a dozen nights ago, he felt almost as agog as a bobby-soxer introduced to Johnnie Ray or Marlon Brando. Occasion was a small dinner (Circumnavigators Club) honoring General of the Army Douglas MacArthur.

By happenstance "Dope" was third in line to shake the hand of D. MacA., when the latter entered New York's Stork Club for the party. Possibly the reaction was psychological, but our right hand tingled warmly for moments thereafter. General MacArthur has a grip like a TV wrestler. Furthermore, his remarkably penetrating eyes, clear complexion, cocky stance, and bouncy manner are those of a professional athlete.

In a huddle at the bar we heard him converse knowingly with Bob Considine, Gene Tunney, and a couple of other Circumnavigators about baseball. Then he was swept away by assorted generals and Big Shots. However, throughout the evening he was "one of the boys." Just a good fella out to have a good time. Believe it or not.

This was a complete "switch" from what we had expected. Our print-fostered impression of the Great Man had misled us to anticipate (1) a forbiddingly armored Presence; and (2) a staggeringly formidable Brain.

D. MacA. demonstrated neither that evening. (No doubt he has both). He frolicked and backslapped like a newly-appointed Sales Manager . . . traded jokes . . . urged others to talk about themselves ("and what is your hobby, sir?") . . . beamed brightly on one and all . . . laughed frequently and heartily.

His speech wasn't particularly significant in content or portent (although delivered with a diluted measure of his mellifluously mesmerizing baritones). Rather, it had the overtones of a man who was enjoying himself, relaxing amongst friends, and hoping that everyone would like him.

Other speakers — Jim Farley, George Sokolsky, Carlos Romulo—

(Concluded on Page 9, Column 1)

'Fortune' Looks at Air Conditioning Boom, Publishes 'Growth' Figures, Cites Problems

DETROIT—A good, hard look at the air conditioning business is taken by *Fortune* magazine in its May issue in Gilbert Burck's article, "The Air Conditioning Boom."

Burck is a senior editor of *Fortune* who has covered the industry in previous *Fortune* articles. He makes some shrewd analyses of industry trends and problems, and presents some very interesting figures on growth patterns both industry-wise, and also by companies who are leading factors in the industry, both in terms of sales and stock values.

The article concentrates primarily on air conditioning for residences, treating room air conditioners and complete residential cooling systems separately. Concerning the complete residential system, a bright future is seen, if certain problems are overcome.

"The trouble, it seems, is the heating contractor and the complexibility of the installation," *Fortune* says. "Like the master plumber, the heating contractor regards himself as a professional man rather than as a commercial animal. And as a salesman, the saying goes, he is often 'all back and no front.'"

Fortune says that the air conditioning industry offers a good idea of the kind of competitive rough-housing that made—and still makes—the U. S. economy hum. The article opens by saying:

"It could happen only in the U. S. Another great mass industry is springing up, not by the fiat of a central planning agency, not out of a gentlemanly agreement among a coterie of monopolists, but out of the drive of scores of competing companies, and individuals with a sharp sense of timing, an abundance of technical resources, a sheer delight in working hard, a wide streak of pugnacity, a soaring imagination, a willingness to take chances, and a yearning for the almighty dollar that fortunately has survived both inflation and a tax structure that all too often hamstrings young and growing

(Concluded on Back Page, Column 1)

Printing Machinery Firm Explains Kerotest Deal, Names New Officers

PITTSBURGH—In a letter sent out this past week, Miller Printing Machinery Co. here explained its purchase of Kerotest Mfg. Co., producer of valves and fittings, and detailed more information about the purchase.

The letter, signed by President R. B. Tullis, said that "no doubt you are saying, 'Why should a printing press manufacturer buy a valve company?' Just two weeks ago we should have asked the same question. However, we have been convinced by the trustees for the Kerotest Co. that we should purchase the company because we were in the same financial difficulties in 1936.

"Through some hard work, perseverance, and, if you would like to call it, luck, our company is now in

(Concluded on Page 29, Column 1)

Revco Introduces New Upright Home Freezer

DEERFIELD, Mich.—Revco, Inc. presented its new upright freezer model UF-173, with a net food storage capacity of 16.8 cu. ft., to regional sales managers at a meeting held recently in Cincinnati at the Terrace Plaza hotel.

The new upright was introduced by J. H. Overmyer, vice president in charge of sales. This is an addition to the line of 8, 15, and 23-cu. ft. "Chill Chest" and Revco 11 upright freezers.

The compact Revco 17 upright has an over-all width of 32 in., is 73 in. high and 30 3/16 in. deep over-all, including hardware.

Its all steel cabinet is of one-piece, wrap-around construction "completely seam-sealed and rust-

(Concluded on Page 4, Column 4)

William Snead Elected President, Chairman of Emerson Electric

ST. LOUIS—William S. Snead has been elected president and chairman of Emerson Electric Mfg. Co. here, succeeding O. C. Schmitt, who died last month.

Snead was formerly vice president and treasurer of the company. He retired from those posts on Dec. 31, 1951, but continued as a director of the company.

G-E Opens Heat Pump Branch In Birmingham

BIRMINGHAM, Ala. — A heat pump sales branch has been opened here by General Electric in line with the company's marketing development program for the new all-season air conditioner.

The Birmingham office-showroom is the first of a limited number of such sales branches to be opened throughout the country by G-E, according to H. M. Brundage, general manager of the company's heat pump department.

"Selling the heat pump involves

(Concluded on Page 4, Column 3)

Sub-Zero To Show New Freezer Line; All-Season Air Conditioner Added

MADISON, Wis.—At a meeting of distributors this month, Sub-Zero Freezer Co., Inc. here will unveil a new freezer line now in production in its new plant, according to W. Bakke, president, who also announced that another new item in the Sub-Zero line is an all-season air conditioner.

The air conditioner "cools or heats

(Concluded on Page 29, Column 1)

Self-Serve Stores Do Better, Swift Official Tells Meat Cutters

CHICAGO—An official of Swift & Co. told a meeting of meat cutters and packing house workers that more and more customers are turning to self-service meats.

Henry Schumacher, the meat packing company official, told a national conference of representatives of the AFL. Amalgamated Meat Cutters and Butcher Workmen of North America that some meat departments experienced a 21% increase in sales when they converted to a self-service system. He also told them that—

"In a very recent study made by a corporate food chain, meat sales in stores selling meat from service cases amounted to 28% of the store's total business while meat sales in stores selling from self-service cases is between 33% to 34% of the store's total business."

Schumacher also told the meat cutters that some stores sell from 25% to 50% of their total volume at night, "yet meat departments are planned for daytime selling." He said that "self-service meat could permit daytime preparation and night-time selling."

The Swift & Co. executive told the meat cutters "we must use every trick in the bag, in view of changing buyer habits and competition from other foods, to hold and gain a favorable sales decision for meat."

Appliance Dealers 'Lag' In Retailing Progress -- Siragusa

NEW YORK CITY—Ross D. Siragusa, president of Admiral Corp., last week charged that with few exceptions, progress in appliance and television retailing has been negligible since 1940.

"Stores have not been kept modern," he declared at the television dinner of the United Jewish Appeal at Hotel Plaza. "There has been no development in appliance and television retailing comparable to the modern postwar supermarket, the super gasoline station, or the up-to-date soft goods specialty shop.

"The majority of TV and appliance stores throughout the country are unattractive, poorly arranged, and badly lighted. Many of them look like glorified repair shops. As a rule,

(Concluded on Page 4, Column 2)

And It Takes Only One Second

Cathode Ray Irradiation Processes Meat To Last 60 Days Under Normal Refrigeration

WASHINGTON, D. C.—The Navy announced recently that scientists at the Massachusetts Institute of Technology, working under Navy contract, have successfully devised an "assembly line" irradiation process by cathode ray that will preserve meat at ordinary refrigeration temperatures for a period of 60 days or more.

Previously tested atomic radiation processes require at least 24 hours to preserve small portions of meat and certain vegetables. The process at MIT requires only one second to complete the preservation.

Such a process is desirable from the naval supply point of view because it would reduce considerably the refrigeration space required for meats.

"Treatment of ground meat by ionizing radiations has been found to extend storage life by a factor of 10," the Navy said.

"Ordinarily ground meat would spoil in six days when kept in a refrigerator at refrigerator temperatures (40-50° F.). Under this new, improved technique of radiation treatment, the keeping time of ground meat has been extended to over 60 days.

"This means that, on a normal cruise of approximately two months, ordinary refrigeration (40° F.) may be used for ground meat instead of freezer storage (0° F.), thus effecting a great saving in freezing space as well as in cost."

Moreover, the MIT food technologists have learned how to eliminate off-flavors and off-odors caused by irradiation, and the product can be safely eaten, the Navy said.

(Concluded on Page 5, Column 1)

Water Shortage In Dallas Curbs Use for Cooling

Tightened Regulations Permit Only '5% Makeup Water' for Any System

DALLAS—What can happen when a water shortage really becomes critical is vividly demonstrated in this Texas metropolis, where under regulations put into effect by the City Council, no water-using cooling system can be operated unless it has a water re-use device that loses no more than 5% of the water.

No exemptions are made for any "minimum" size system, thus making the regulation applicable to all water-cooled systems. The regulations also apply to evaporative cooler type air conditioners, in which water is the only cooling medium used.

Air conditioning and refrigeration industry sources say that the "5% makeup water" figure permits the operation of any system with an evaporative condenser, or with either a forced-draft or atmospheric type cooling tower.

Dallas had drouth-provoked water shortages last year, and at that time passed regulations requiring air conditioning systems with 1,800 c.f.m. and over air handling capacity to make use of a water recirculating system. When the situation apparently was getting worse instead of better this year, the City Council issued the more restrictive regulations.

In addition to restricting the use of water in cooling systems, the regulations make it illegal to permit any plumbing defect to go uncorrected; to let water flow constantly in any commercial establishment (such as restaurants, photographic labs, etc.), to wash cars (unless a recirculating device is used) or to water lawns except every other Saturday (odd-numbered houses one week, even-numbered the next).

The rules have been made effective "until further notice." Dallas citizens expect that they might be in effect for quite some time, unless the area gets a lot of the type of rain that Texans call "gulley washers."

Frigidaire Sets Up Zone Sales, Service Managers

DAYTON—Frigidaire Div. of General Motors Corp. announced recently that "in the interest of more effective and direct contact between factory sales and service departments and Frigidaire's sales districts," it has set up an organization of zone sales and service managers to handle these contacts.

H. F. Lehman, general sales manager, explained that the new zone sales and service managers, operating out of the factory, are assuming some of the responsibilities previously held by four of the division's five regional offices.

Because of its distance from the factory, the Pacfic region office, in San Francisco, continues as the sales contact in that area, he said. Regional offices in Atlanta, New York, Dayton, and Dallas were discontinued, effective May 1.

Administrative and operational matters involving districts will be

(Concluded on Page 4, Column 4)

IN THIS ISSUE

Odor Research Conference Hears That There Are Many Problems and Few Known Facts In This Field 7
How Department of Defense and Industry are Working Toward Standardization of Refrigeration Equipment 10
Rolling Showroom Creates Curiosity, Ups Sales 13
Freezer Demonstrations Should Emphasize Convenience 15
Calculating Cooling Loads 20
Continuous Freezer Efficiency Is Equal To How Well Operator Understands It... 22
Self-Serve Department Store Uses 300-Ton System To Keep Merchandise, Customers Fresh 24
Vapor Problems Are Many, Varied In Home Air Conditioning 26
What's New 18
Refrigeration Problems — A Two-Stage Ethane-"Freon-22" Freezer System... 27
Government Contracts 30
Evaporative Condensers 31

See Slap at Buying for Freezers

NFFLI Protests Meat Packers' Ad As Detrimental to Locker Operators

ELIZABETHTOWN, Pa.—An advertisement telling the consumer that he would not save money by buying a whole pig is bringing an immediate "official protest" from the National Frozen Food Locker Institute here.

The advertisement was sponsored by the American Meat Institute. It asked the question: "Would You Save Money on Pork if You Bought A Whole Pig?" It went on to answer the question by pointing out that from a 240 lb. pig, the purchaser would get only about 100 lbs. of the more popular cuts. Another 20 lbs. would be in less popular cuts, 35 lbs. in lard, and 90 lbs. in pure waste.

The ad went on to explain that the meat packer makes many valuable by-products from the waste that help cut down the cost of the edible portions to the consumer.

In a letter to the American Meat Institute, Robert L. Madeira, executive secretary of NFFLI, declared that "publication of this advertisement is a great disservice to the nation's 11,000 frozen food locker plants. The locker industry has literally millions of patrons who obtain their pork in exactly the manner you decry in this ad."

After pointing out the role played by the locker industry in providing meat to 30,000,000 Americans using lockers and home freezers and as customers of the meat packers, Madeira concluded:

"We imagine that what your ad is trying to achieve is an understanding of the important bearing that 'by-products' have on depressing the price of consumable meat. With this we find no fault. The thing that bothers us, however, is that your advertisement must raise, in the consumers' minds, the question about the advisability of buying any meat in carcass form.

"And when this question is raised, you are striking at the very reason that millions of people use locker plants and home freezers.

"This matter is of the greatest concern to us and to our industry. To this protest we anxiously await your reply."

Henry Valve Co. Appoints Alexander Asst. Sales Mgr.

MELROSE PARK, Ill. — Appointment of Sterling Alexander as assistant sales manager was announced by the Henry Valve Co. here.

S. Alexander

Alexander, who has been with Henry for 11 years, will supervise all sales personnel and have charge of export sales, the company said.

Loblaws Promotes Ice Cream Sales with New Type Insulated Take-Home Cartons

BUFFALO—Loblaws supermarkets are boosting take-out ice cream business in their frozen food departments by featuring a new type of insulated carton which the chain says keeps ice cream melt-proof for an hour to an hour and a half.

Loblaws is promoting the new carton with special displays near its self-service ice cream freezers and newspaper advertising. Says advertising copy:

"Loblaws again introduces another first in this area. This new insulated carton, actually three cartons in one, keeps your ice cream purchase melt-proof for one to one and a half hours.

"A special packaging machine (one of the few in the nation) is now being used to wrap Park Club ice cream in the carton that will retain its hardness from Loblaws to your home.

"The secret of this carton's cold retention ability lies in the corrugated inner-liner. This, in effect, keeps a layer of cold air around the package of ice cream."

Asks Ill. 'Death-Trap' Law For Junked Refrigerators

SPRINGFIELD, Ill.—A bill which would make it illegal for anyone to abandon refrigerators or ice boxes in any place accessible to children has been introduced in the state legislature by Sen. Peter J. Miller of Chicago.

Set Date for Hearing on Sabbath-Closing Proposal

DETROIT — Appliance dealers would be required to close on the Sabbath under a proposed city ordinance.

A public hearing on the measure is scheduled to be held in the city council chambers at City Hall on Wednesday, May 13, starting at 10:30 a.m.

The proposed ordinance would make it illegal to open a store on Sunday to sell, rent, lease, or exchange furniture, including, but not limited to, television, radios, and/or household appliances. An exception would be made in the case of merchants who observe Saturday as the Sabbath.

Violators would be subject to a maximum fine of $500 or confinement for not more than 90 days in the Detroit House of Correction, according to the law.

Amana To Sponsor Radio Show 'People Are Funny'

AMANA, Iowa—Starting May 19, Amana Refrigeration, Inc., manufacturer of Amana food freezers, will sponsor "People Are Funny," starring Art Linkletter, on the CBS radio network.

The half-hour program, originating in Hollywood at 8 p.m. (EDT) each Tuesday night, will be carried by 214 CBS stations, the largest network that has ever broadcast this show.

"Sponsorship of this program will make Amana the first to sponsor a top-ranking nighttime national radio show promoting freezers exclusively," declared George C. Foerstner, executive vice president of Amana Refrigeration.

The company now sponsors Kate Smith every Thursday on the entire NBC television network.

Atlanta Hotel Air Conditioned

ATLANTA, Ga. — Announcement has been made that work on the air conditioning of 200 rooms in the Atlantan hotel, comprising the entire north wing of the building, is now under way. The Atlantan is owned by the S. A. Lynch Corp., of Miami. Harry Donahue is manager.

Donahue said the installation is scheduled for completion June 15. The remaining 100 rooms will be air cooled with exhaust fans for the present.

Excise Tax Collections on Some Items Drop In '52

WASHINGTON, D. C.—The Bureau of Internal Revenue reported recently that excise taxes collected from manufacturers of mechanical refrigerators, freezers, air conditioners, etc., in 1952 totaled $70,228,690, compared with $79,518,186 in the previous year.

13-Week Television Show With Dealers Sharing Costs Brings Excellent Results

PITTSBURGH — Television film show sponsored here for 13 weeks by Allegheny Products Co. and participating dealers brought an excellent response. Refrigeration sales manager is L. A. Anderson.

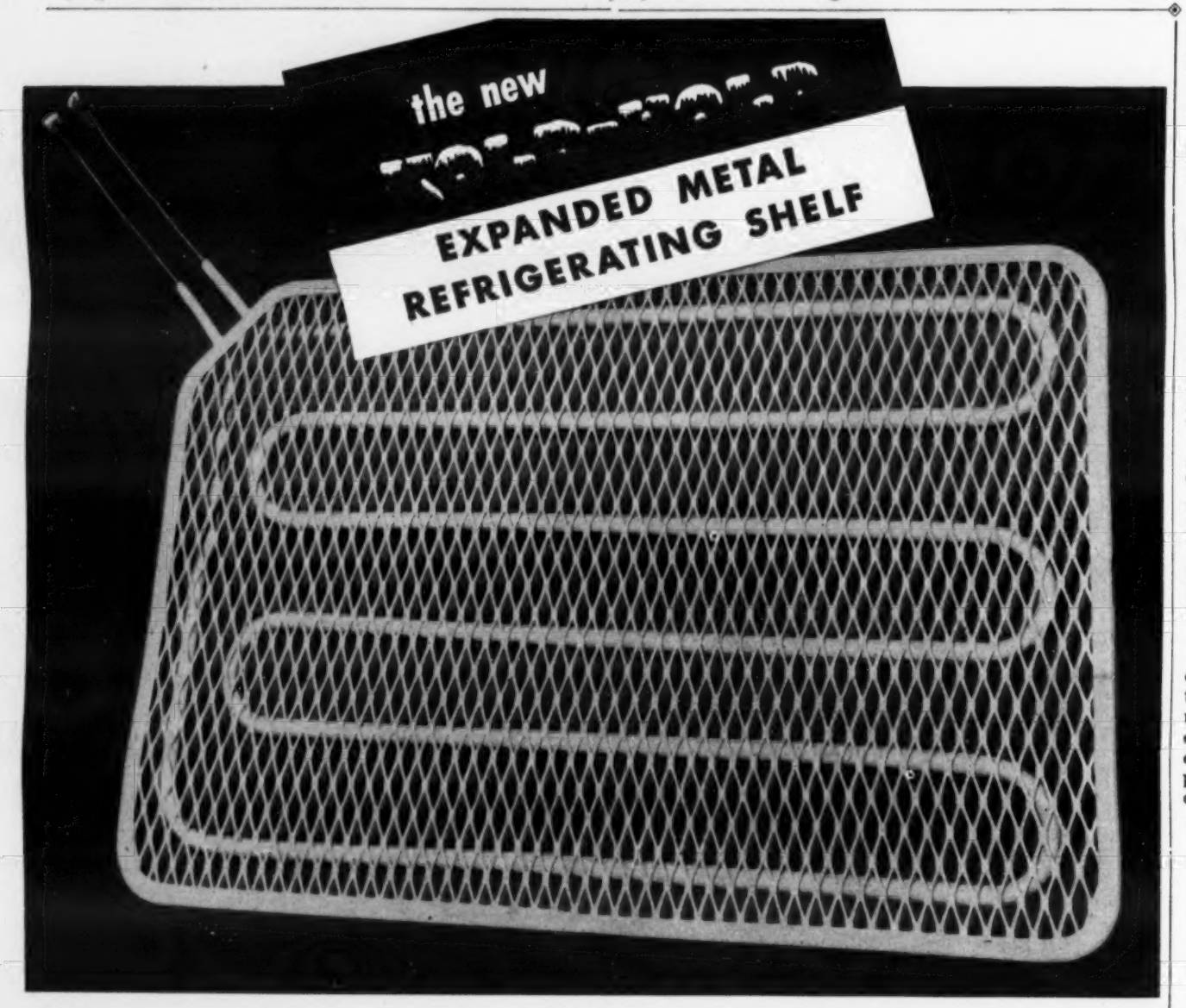
Program response averaged 5,500 replies a week, with a 75,000 top, and a minimum of 3,000 replies. Program ran 13 weeks as half of a program advertising also radio and television, with refrigerators and freezers advertised together on alternate weeks.

One dealer sold three refrigerators, a freezer, and several television sets in one day—more merchandise than in his previous three weeks of selling. Prospects simply dropped in to get entry blanks. Other prospects filled out a blank appearing in the daily paper.

Judson Sayre To Quit As Consultant To Avco

NEW YORK CITY — Judson S. Sayre, who has been a consultant to Avco Mfg. Corp. since resigning recently as Avco vice president and general manager of Bendix Home Appliances Div., disclosed last week that he will terminate his association with the corporation.

Sayre said he was leaving Avco so he could devote his time to personal and other business activities.



. . . has 7 EXCLUSIVE DESIGN ADVANTAGES

1. SUPER EFFICIENCY—The new Kold-Hold Refrigerating Shelf has the best combination of faster pulldown and freezing than any other refrigeration plate or shelf. Its unique construction of expanded metal and tubing provides both conduction and convection of heat plus the wiping action of the air around its multiple surfaces.
2. LOWER INITIAL COST—In spite of this higher efficiency, Kold-Hold shelves cost far less initially than conventional plates. Their simplified design eliminates complicated tooling and manufacturing procedures which add to the cost of other designs.
3. SIZE AND DESIGN FLEXIBILITY— Most any size and fitting arrangement can be supplied to meet your needs. Fittings can be located anywhere along the outer edges convenient for easy installation in your cabinet.
4. EASIER CLEANING—Kold-Hold shelf construction leaves all surfaces exposed for fast, easy cleaning. Defrosting is fast and uniform due to the even temperature across the entire plate surface. . .
5. ADD SALES APPEAL TO YOUR FREEZER OR CABINET—Kold-Hold Shelves are modern and streamlined to match your most attractive cabinet designs. They are available with plain or "proseal" finish.
6. DEPENDABLE PERFORMANCE — Manufactured, sold and backed by a firm with years of experience in the refrigeration evaporator field, Kold-Hold Shelves are assembled by brazing in controlled atmosphere to keep the refrigerant passage clean, dry and free of leaks. They will provide trouble-free service throughout the life of the cabinet.
7. ENGINEERING ASSISTANCE —Refrigeration engineers, who have developed many advanced refrigeration products, will help work out your refrigeration problems.

WRITE TODAY FOR FULL DETAILS
KOLD-HOLD
KOLD-HOLD MANUFACTURING COMPANY
500 E. Hazel St., Lansing 4, Michigan

IT'S A GEM!

Dealers and users are excited about Gem Refrigerators . . . custom features, competitively priced, by a maker 30 years in the business. It's a terrific deal!
Rich, New Territories Open. Write today!
GEM REFRIGERATOR CO.
165 W. Wyoming Ave., Phila. 40, Pa.

E-Z-SEE
LIQUID INDICATOR

NEW FLO INDICATOR FLAP SHOWS ALL FLOW CHANGES
Analyze flow, function of expansion valve, by means of E-Z to SEE sensitive flap, instantly responsive to variations in flow. Positively leak-proof — hundreds of thousands in use.
Available at Wholesalers everywhere
REMCO
INCORPORTED
ZELIENOPLE, PA.

Ace FULL VISION LOW TEMPERATURE Merchandisers

GLASS FRONT • GLASS TOP
SHOWS MORE! SELLS MORE!
Sizes available for every need.
Ace Cabinet Corporation
New Bedford, Massachusetts
Exec. Sales Office:
1457 Broadway, New York 36, N. Y.

Now! Room Air Conditioners Join the Kelvinator Parade!

HERE IS ANOTHER Kelvinator sales opportunity for retailers—two new Kelvinator Room Air Conditioners (½ and ¾ H.P. capacities).

These new Kelvinator Room Air Conditioners are designed to provide maximum cooling with minimum operating and installation costs. They fit into virtually any home or office window and require no plumbing or drain connections . . . operate off standard 115 or 230-volt current. Special mounting brackets can be quickly attached to the window sill, the unit placed in position and plugged in . . . all in a matter of minutes. In fact, the entire installation is done from *inside* the room. Units are richly styled and blend inconspicuously into any interior decorative scheme . . . cool, filter and circulate fresh outside air to any part of the room—*without* drafts!

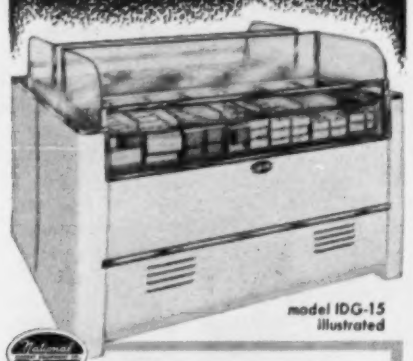
You'll find these new Kelvinator Room Air Conditioners offer extra-value features typical of every product in the new, expanded Kelvinator line . . . features that are causing more and more families to join the Kelvinator Parade to Better Living. And how can *you*, specifically, benefit by this trend to Kelvinator? Just drop us a line and we'll be glad to tell you, *in confidence!*

JOIN THE Kelvinator PARADE TO BETTER BUSINESS!

Division of Nash-Kelvinator Corporation, Detroit 32, Michigan

REFRIGERATORS • RANGES • FREEZERS • WASHERS AND IRONERS • WATER HEATERS • DEHUMIDIFIERS • KITCHEN CABINETS • SINKS • "ELECTRO-DRAIN" GARBAGE DISPOSERS • ROOM AIR CONDITIONERS

NEW! NATIONAL ISLAND MERCHANDISER ...for Frozen Foods and Ice Cream



model IDG-15 illustrated

- self-contained unit—ready to plug in!
- can be spotted anywhere—builds impulse sales!
- available in three sizes—10, 15, 21 cu. ft. capacities!
- can be used individually for wall display!

See Us At The S.M.I. Food Show! BOOTH 456 • AREA A

NATIONAL MARKET EQUIPMENT COMPANY
410 E. Fifth St. • Royal Oak, Mich.

MORE INFORMATION?
Use Handy Coupon on "What's New" Page of this issue.

Appliance Dealers 'Lag'--

(Concluded from Page 1, Column 4)

floor men are so inadequately trained they hardly qualify as good order takers let alone able salesmen.

"Harsh as this indictment may seem, it is deserved far more often than not in the industry today."

After citing examples of the competition for the consumer's dollar "that is coming from every direction at once," he warned:

"Our industry cannot stand still and meet such competition. We have got to progress and progress fast."

Siragusa said there are five principal areas "where there is a crying need for improvement.

"One is the layout of dealers' stores and their display techniques. Second is the quality and training of retail sales personnel. Third is in promotion and merchandising. Fourth is in personal contacting or, if you will, doorbell ringing, to get prospects. Fifth is in service, which too frequently is neither prompt, reliable, nor friendly.

"Most leading manufacturers in the industry have been working hard to help dealers do a better job in these five fundamentals of sound retailing. Many dealers have been plugging hard at the problem, too. But the majority still have not seen the handwriting on the wall.

"I have heard dealers complain that the factories overburden them with sales helps and wear them out with selling and sales training advice. . . . Dealer should welcome with open arms any manufacturer's representative who walks in with a live promotion.

"You can bet your last dollar that more of these traffic builders are coming. The manufacturer who originates the best ideas and the dealers who capitalize on the most effective ones will get the business."

The Admiral executive painted a bright picture of the growth possibilities for most major appliances and then said:

"You may ask 'Where is the money coming from?' I suppose people asked that same question when the automobile industry was in its infancy. The answer is, of course, that it is coming out of increased real wages which the American worker will earn as a result of increased productivity.

"People can use only so much of non-durable consumption items such as food. As their income increases the gain is spent on durable goods

G-E Heat Pump--

(Concluded from Page 1, Column 3)

special application and sales techniques not experienced in handling other equipment. We expect to get first hand information on these new techniques so that we may assist our distributors to keep pace with the growing consumer interest in the unique unit," Brundage said.

The heat pump is an all-electric year-round air conditioner that cools without water and heats without burning fuel of any kind.

The sales branch here is temporarily located at 2854 S. 18th St., Homewood, and will shortly move to permanent quarters at 2846 on the same street. Operating units will be on display in the showroom.

J. M. Hand, Jr. is manager of the branch. C. G. Geiger is office manager, and F. C. Johnson is application engineer.

REVCO's new upright freezer model UF-173 offers as an exclusive feature a dual-light, single lens automatic signal system. It is visible at all times with a green light indicating normal operation. Red light indicates temperature rise above safe storage.

Revco Upright--

(Concluded from Page 1, Column 2)

proof to protect insulation against moist air infiltration."

"A new exclusive Revco feature is the dual-light, single lens automatic signal system. It's visual at all times. Green light indicates normal operation; when red, it indicates rise above safe storage."

Of particular interest to the regional sales managers was the new aluminum food compartment with refrigerated walls plus two refrigerated shelves for direct contact freezing of foods.

Two of the four shelves are of the new open wire-grille type, non-refrigerated, which is said to aid rapid cold-temperature circulation throughout the interior of the freezer. An added convenience feature is that one of the open wire-grille type non-refrigerated shelves is removable for the storing of bulky packages.

Other features are two pull-out baskets and four door shelves for greater convenience in storage and accessibility to foods in the freezer.

Following presentation of the freezer, new promotional aids and material for forthcoming promotions in the field were described by J. W. Rietzke, sales promotion and advertising manager.

Free Power Deal Offered To Spark Range Campaign

ALTOONA, Pa.—Electrical appliance dealers throughout the territory served by Pennsylvania Electric Co. are offering their customers an opportunity to buy an electric range in May and operate it free for the remainder of the year.

By arrangement with Penelec, dealers will present each buyer of a new electric range with a book of seven coupons worth $2 each when applied to the purchaser's electric bill. The $2-a-month figure is based on average monthly cost of operation for a family of four in Penelec territory.

Frigidaire Zone Setup--

H. T. Mattern

R. H. Huston

(Concluded from Page 1, Column 5)

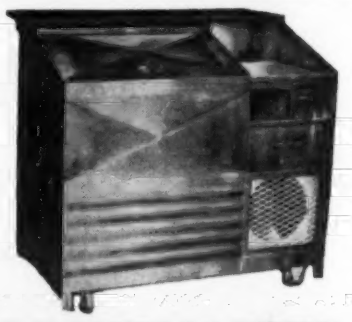
handled by a new branch and distributors operations department at the factory, headed by H. T. Mattern, formerly manager of the central region office in Dayton. He also becomes manager of branches for the Frigidaire Sales Corp.

R. H. Huston, former eastern region manager, is now assistant appliance sales manager at the factory.

F. M. Davison, formerly southeastern region manager, handles special assignments in the general sales department at the factory.

W. G. Jennings, former southwest manager becomes manager of the Oklahoma City branch.

The new sales and service zone manager organization is staffed primarily by former regional personnel.



DRINKMASTER
PORTABLE — REFRIGERATED
Stainless Steel HOMEBAR
PLASTIC CHARTREUSE FRONT
BLACK TOP
Mfd. by
United Friguator Engrs.
Menominee, Mich.
Write for free 8" x 10" Photos

Complete APPLIANCE WIRING SYSTEMS

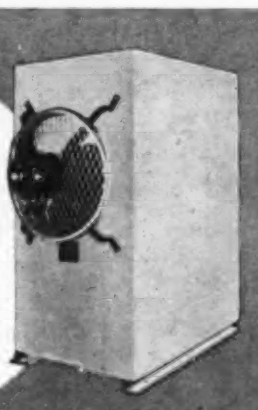
CUSTOM ENGINEERED TO REDUCE YOUR ASSEMBLY COST

Streamline production with Riverside wiring harnesses! These neat "packaged units," engineered for accurate, easy installation by unskilled assemblers, make possible the efficient hookup of a single unit installation to your product. We design and manufacture them in any required arrangement, including necessary terminals, relays, limit switches, push-button stations, circuit breakers, junction blocks, etc. Engineering and Experimental departments at your service, without obligation. Call us or send details of your problem for prompt design recommendations and a firm quotation.

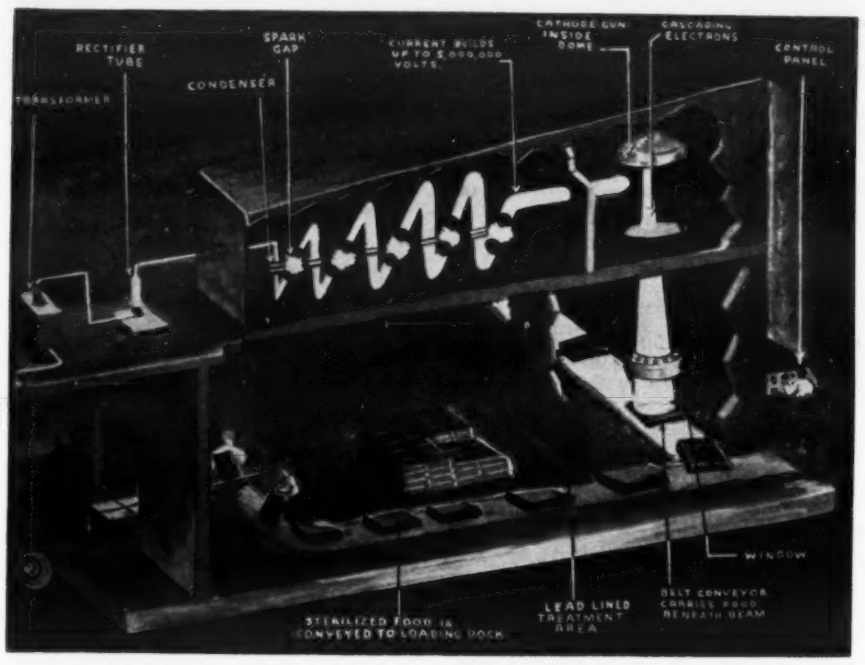
RIVERSIDE MANUFACTURING AND ELECTRICAL SUPPLY COMPANY
10233 Michigan Ave., Dearborn, Mich., Tiffany 6-6800
WIRING HARNESSES AND ASSEMBLIES • CORD SETS • HEATER AND EXTENSION CORDS • SWITCHES • MOLDED RUBBER PRODUCTS

NATIONAL LOCK
STANDARD and CUSTOM-BUILT
REFRIGERATOR HARDWARE
SHELF SUPPORTS
SCREWS and BOLTS
BUTTS and HINGES
STOVE HARDWARE
HANDLES
PULLS
NATIONAL LOCK COMPANY 50th YEAR 1903-1953
WRITE US FOR FULL INFORMATION AND DESIGN DETAILS
NATIONAL LOCK COMPANY
ROCKFORD, ILLINOIS
REFRIGERATOR HARDWARE DIVISION

KRAMER
COOLING TOWER
with the Fill of New Scientific Design. It provides for more capacity by maintaining even water distribution throughout the unit.



3 to 8 TONS
Write for Catalog R-225
KRAMER TRENTON CO. • Trenton 5, N.J.



"COLD STERILIZATION" of foods can be accomplished through a process such as the one shown in the above drawing, according to research carried out by Massachusetts Institute of Technology at the request of the Bureau of Supplies and Accounts of the U. S. Navy. Conveyor belt carries food (which could be packaged in plastic bags) to "treatment area" where it is "cold sterilized" in an instant by a beam emitting ionizing radiations. Meat thus sterilized, say those conducting experiments, would keep for 60 days or more at 40° F. temperature.

Irradiation Process Lengthens Meat Life--

(Concluded from Page 1)

The miniature "assembly line" is simply a 6-ft. conveyor belt that passes the meat under cathode rays generated in a three million volt accelerator that imparts high energy to the electrons. The rays bombard the meat and kill the bacteria.

Hamburger, which ordinarily spoils within a few days at 40 to 50°, is the meat most successfully treated. The MIT researchers also have preserved fresh spinach and pink (nearly ripened) tomatoes.

Navy food technologists say the cathode ray process of irradiation could become the greatest step forward in preservation of food on a commercial basis since the process of canning was discovered.

The scientists at MIT do not claim the process will sterilize meat and preserve it at room temperatures, but they do not rule out this as a possible future development on the basis of progress to date.

Preliminary experiments leading up to present developments were initiated during World War II in the laboratories of MIT's Department of Food Technology, according to the Navy.

These experiments indicated that ionizing radiations might be of use in the sterilization of foods without the use of heat. The source of radiations for this purpose was an air-insulated Van de Graaff accelerator producing X-rays.

After the war, an intensive research program for "cold sterilization" of foods, drugs, pharmaceuticals, and other heat-sensitive materials was begun in the Food Technology Department under the direction of Prof. B. E. Proctor, head of the department.

("The source of the ionizing radiations," the Navy explained, "may be a particle accelerator, such as now conventionally used for nuclear physics or X-ray therapy, or radioactive isotopes.

("With the advent of the atomic energy era, radioactive isotopes are becoming available in large quantities as waste products of atomic fission, and the radiations from these isotopes can be used as the sterilizing agent.")

In 1951, the Bureau of Supplies and Accounts of the Navy signed a contract with the Food Technology Department of MIT to conduct research to determine whether sterilization of meats by this novel means might be feasible.

WHY NAVY IS INTERESTED

"As no heat is used, it would be possible to package the meat in containers other than conventional cans, such as plastic films, thus saving considerable storage space, the Navy reasoned.

It was early found that this type of processing could cause undesirable changes in food materials, such as the production of off-flavors and off-odors.

STOP UNDESIRABLE CHANGES

"As part of its irradiation program, the MIT Food Technology Department developed a novel means of preventing these undesirable changes, by addition of "free radical" acceptors to the foods. This procedure has proved successful in the sterilization of chopped meats.

"Observations thus far made have proved that the sterilization of meats for the Navy by use of ionizing radiations is potentially feasible, and the research is being continued in an attempt to solve problems that yet remain," said Navy officials.

"As a result of the studies on meat, further research was initiated last year at MIT under contract with the U. S. Navy's Bureau of Supplies and Accounts, to investigate the potentialities of cold sterilization of fruits and vegetables, and this project is now being pursued."

'House and Home' Magazine Article Boosts Well-Water for Residential Installations

NEW YORK CITY — Well-water air conditioning can drastically cut cooling costs for single houses or housing projects in areas where cold water is plentiful, it is expounded in the current issue of *House & Home*.

The cost of such air conditioning is low, says the *House & Home* article, because a mechanical refrigerating unit is not needed, the article explains. "To cool a house, cold water is simply piped to the metal tubes of a finned coil (similar to an automobile radiator)," it states. "Air blown over the cold tubes is chilled and dehumidified just as if the coil were 'Freon' cooled.

"Proof that it works: without costly apparatus—compressor, condenser, etc.—cold well-water is used to air condition several thousand restaurants, theaters, and industrial plants in the United States, including Long Island's Republic Aircraft plant, part of the DuPont plant in Wilmington, Dela., and Sunshine Biscuit's Kansas City plant.

"For cooling houses," says the article, "you insert the water coil in the supply duct of the forced-air heating system and hook up water pipes. . . . In summer the furnace blower is turned on to circulate cool air. However, well-water cooling depends on three basic points:

"1. For efficient cooling the inlet water temperature should not exceed 55°. In the United States, this limits well-water cooling to roughly north of the 38th parallel.

"2. The quantity of water needed is proportional to water temperature. At 55° about 3 gals. per minute are needed per ton of cooling. This means you need about 6 g.p.m. for a 1,000-sq. ft. (2-ton) house, 9 g.p.m. for up to 1,800 sq. ft. Less water is needed when temperature is below 55°.

"3. The forced-air heating and ductwork system must be designed properly for both heating and cooling. Above all, the chilled water coil must be selected by an expert; its size depends on the cooling load of the house and on water temperature. Poor coil selection may result in high relative humidities and inadequate cooling."

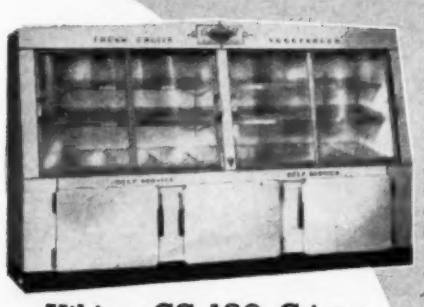
ACRMA Issues '53 Edition Of Conditioner Standards

WASHINGTON, D. C. — Publication of a 1953 edition of "Equipment Standards for Room Air Conditioners" was announced recently by the Air Conditioning & Refrigerating Machinery Association.

"Standard 110, Room Air Conditioners," has been completely revised in order to keep pace with the latest developments in the rapidly-growing room air conditioner industry, the association said.

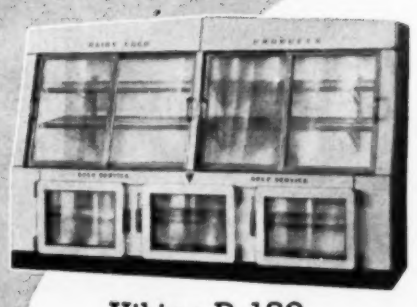
The new publication, which also includes the ACRMA recommended Cooling Load Estimate Form for Room Air Conditioners, is available from ACRMA, Southern building, Washington 5, D. C., at 25 cents.

Here's a
Pair of Profit Makers
for You



Viking CC-120 Crispy-Cold . . . best seller for fruits and vegetables

Features Viking Dew-Mist Control . . . keeps produce fresher 3 to 5 times longer. Gives refrigeration plus high humidity . . . eliminates wasteful spoilage. The profit potential, attractive appearance, efficiency and economy of the CC-120 CrispyCold means that it sells itself to your customers. Available in 90 and 120 inch sizes.



Viking D-120 best seller for dairy products

Designed for maximum eye-appeal...buy-appeal. The Viking D-120 displays dairy items properly...invitingly...keeps them fresh, clean and protected. Controlled humidity saves merchandise...saves operating expense. The Viking D-120 has all the quality features that make all Viking Cases best sellers...for you and your customers. Available in 90 and 120 inch sizes.

Mail Coupon TODAY

To Sell More, Sell **Viking!**
Inquire today about a **Viking** franchise.

Viking Refrigerators, Inc.
7500 Wilson Ave., Kansas City 3, Missouri
☐ Please send me complete information on Viking CC-120 CrispyCold and Viking D-120 best seller display cases.
☐ Tell me about the availability of Viking Franchises in my area.
Name _____
Firm _____
Address _____
City _____ State _____

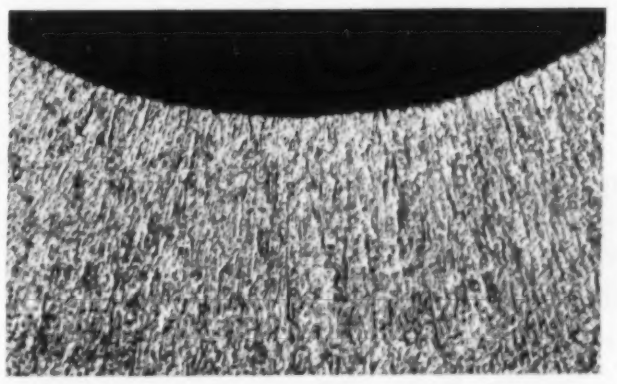
SINCE 1904 HEAVY LOADS
VIKING REFRIGERATORS, INC.
7500 Wilson Ave., Kansas City 3, Mo.

SEE THIS TINY HOLE IN THIS TINY TUBE?

It is plug drawn

By being plug drawn, the tube is endowed with an inside surface of exceptional, mirror like smoothness. Thus the flow it provides is uniform, and uninterrupted, and high efficiency in operation is attained.

THIS DISTINCTIVE TUBE IS CALLED
Capilator*
the capillary tube used for restriction purposes



The accompanying photomicrograph, showing a 200-time magnification of the inside wall of the Capilator, gives you a good idea of the smoothness of this inside surface. The size of the tube shown was .081" O.D. x .031 I.D.

*REG. U. S. PAT. OFF.

When you attend the Inform-A-Show in Los Angeles May 24-27, be sure to visit our Booth 304.

It is to your great advantage to learn more about Capilator—indeed an exceptional capillary tube.

WOLVERINE TUBE DIVISION
of CALUMET & HECLA, INC.
ESTABLISHED 1916
Manufacturers of Tubing Exclusively
1413 CENTRAL AVENUE • DETROIT 9, MICHIGAN
Plants in Detroit, Mich. & Decatur, Ala. *Sales offices in Principal Cities*

Other Wolverine Products
CAPILATOR* —the capillary tube for restriction purposes
COMMERCIAL TUBE
AUTOMOTIVE TUBE
CONDENSER TUBE
COPPER WATER TUBE (K-L-M)
ELECTRIC WELDED STEEL TUBE
FABRICATED TUBULAR PARTS
WOLVERINE TRUFIN* —the integral finned tube
REFRIGERATION AND AIR CONDITIONING TUBE (Plain or Tin Plated)
S.P.S. PIPE
SPUN-END TUBE†

*Reg. U. S. Pat. Off.
† A Patented Process RE 22463

Export Department, 13 E. 40th St., New York 16, N. Y.

CLOSE-UP of conference room in offices of Resistol Hat Co., showing Remington 1½-hp. console air conditioner installed in front of window. This unit not only cools in summer, but filters, circulates, ventilates, and dehumidifies air. Machine is controlled either automatically or semi-automatically.

ROOM COOLER NEWS

Console Room Conditioners

2 Units Keep Merchandise Clean While Customers Enjoy Comfort, and Employes Notice Freedom from Colds

NEW YORK CITY—Testimony to the beneficial results obtainable with room air conditioners in an existing office setup is offered by officials of Resistol Hats, Inc., 350 Fifth Ave. here.

The firm occupies a medium-sized 3-room ultra-modern suite which includes offices and a showroom. Two years ago the firm purchased Remington console-type room air conditioners.

According to Max S. Schwarz, purchasing agent, reasons for installing air conditioning were: office cleanliness, employe efficiency, and customer comfort. The dirt problem was particularly acute, causing soot damage to merchandise in the showroom. The hat company officials testify that air conditioning has accomplished all that they had hoped for in their decision to buy the units, and more.

Since installing the units, for example, the firm has found that humidity control provided by the units is an important factor. In the showroom, in summer, the felt hats tend to absorb moisture when exposed to humid outside air. With air conditioning, the felt stays completely dry and the hat may be shown to best advantage. Excessive humidity is also a factor in poor employe performance, sometimes more so than the heat. The units have also eliminated this condition, Schwarz indicated.

One highly interesting result has been that in the two years the units have been installed, not one employe has been absent a single day due to colds or influenza, not even during the past winter's "flu epidemic." Comfortwise, office temperatures during the hottest days of last summer, a period of record high temperatures, never exceeded 68-70° F.

Employe efficiency and morale have also improved, Schwarz reports.

In setting out to purchase air conditioning, the hat company considered various types of systems. They discovered that two 1½-hp. Remington console air conditioners, delivering the 2½ to 3 tons of air cooling capacity required for the space, could be purchased and installed for less than other systems which would do a comparable job, company officials state.

Further, no plumbing or ductwork would be required, office business would not be disrupted, nor would the layout be changed. Sole installation requirements were the running in of a special three-phase electrical circuit, and connecting a window duct.

Another factor influencing the decision was that the console units would not be permanently installed, and could be moved, should the offices be moved.

In the past two years since the console units have been installed, operating costs have been about $12 per month in summer for electricity and about $20 per year for maintenance—routine inspection, oiling, etc. Since, because of the dirt problem, the firm operates one unit the year-round, the average monthly electric cost would be less than $6.

RCA Reports Spring Conditioner Sales Ahead Of '52, Predicts Industry Sales of 700,000

CAMDEN, N. J.—Room air conditioner sales currently are bettering spring sales marks of 1952, an official of RCA Victor reported recently.

Customers apparently are not waiting for heat and humidity before buying, according to Robert A. Seidel, a vice president of the company.

"Optimistic predictions for the sale of room air conditioners during 1953 apparently were well founded," he said. "Dealers in the southwest, midwest, and on the eastern seaboard report an early start on sales."

Without a doubt, the official stated, the room air conditioner industry is in a period of growth that will place it among the nation's leading industries.

Seidel, who heads air conditioner activities at RCA Victor, reported that after 20 years of relatively low sales volume in this field, room air conditioners are now finding enthusiastic public acceptance.

"This year of 1953 is the one the industry has been waiting for," he said. "It marks the beginning of a period of expansion that will lead to achievement of the great potential of room air conditioners as an aid to health and comfort in the modern home."

Most forecasts place 1953's total unit sales at about half a million, which would represent an increase of 46.6% over last year's sales. However, Seidel believes the forecast is conservative, and that the industry's unit sales will be considerably higher, possibly reaching the 700,000 mark, or about double last year's.

Seidel outlined four "good, hard-headed reasons" for his optimism:

1. Seventy manufacturers and merchandisers in the room air conditioner field this year, as compared to about 20 in 1952. His company welcomes these newcomers, he stated, because their advertising and promotion campaigns will add to the general interest in air conditioners.

2. Increased activity on the part of distributors. They no longer look upon room air conditioners as merely a supplementary business, he said. Most distributors are setting up separate room air conditioner departments, and assigning members of their staff to specialize in the field.

3. Many more dealers handling room air conditioners this year—and with greater enthusiasm for the business than they have ever exhibited in the past.

4. Advances in engineering and styling. He referred specifically to some of the improvements in the 1953 RCA line, such as larger grilles that can direct the flow of air to any part of the room, a concealed "climate tuner" control panel, easily removable filters, and a new color scheme of two-tone gray that blends with any decor.

In a move to extend the selling season of room air conditioners, said Seidel, RCA Victor began shipments to distributors in December, instead of in the latter part of January, as last year. Furthermore, the company stepped-up the "break-date" of its consumer advertising campaign by two months.

Lacey Joins Fedders as District Sales Manager

BUFFALO—Allan T. Lacey, former assistant manager, Appliance Sales Div., General Electric Supply Corp., Chicago, has been appointed a district sales manager of Fedders-Quigan Corp., according to R. E. Cassátt, sales manager, Refrigeration Appliances Div.

Allan T. Lacey

Lacey will represent Fedders-Quigan in Illinois, Michigan, Wisconsin, Missouri, and Indiana.

While with Gesco, Lacey was responsible for Hotpoint dealer relations and all phases of Hotpoint merchandising in Chicago.

RCA Names Seippel Agent For Room Coolers In South

CAMDEN, N. J.—John H. Seippel has been named field sales representative for RCA room air conditioners in the southern region, with headquarters in Atlanta, according to W. F. Carolan, general sales manager of the air conditioner department of RCA Victor Div.

Seippel has served as a regional sales manager for Fedders-Quigan Corp. since 1948. During the four years prior to that, he was with Raytheon Mfg. Co. in a sales-engineering capacity.

Remington's Stockholders OK Share Split, Increase Common and Preferred

AUBURN, N. Y.—Stockholders of Remington Corp. at a special meeting voted to split present $5 par common shares on a basis of 5 to 1 and the $25 par preferred stock 2½ to 1.

Increase of the number of authorized common shares from 50,000 of $5 par to 1,000,000 of $1 par and preferred shares from 2,500 of $25 par to 50,000 of $10 par also was authorized at the meeting.

Herbert L. Laube, president, told the meeting that the increased capitalization is necessary because the profit left after today's taxes is far from enough to finance Remington's continued growth in the rapidly-expanding air conditioning industry.

Buy Peerless FOR PERFORMANCE

DRIP-PUMP for Condensate on Air Conditioners

The Peerless Drip-Pump solves the troublesome drainage problem—on air conditioners, coolers, refrigerators and other machines where condensate is present—by eliminating hazardous gravity drains altogether! The Drip-Pump lifts condensate *up and out, overhead* . . . saves valuable space.

Illustration shows Model DP-2 high capacity high lift pump for air conditioner applications. Also available is Model DP-1 packless centrifugal type pump, driven by "flea-power" motor . . . the ideal pump for use for dome, unit or flash coolers. Both models are ruggedly built for long, hard service; easily and quickly installed. Write for full information.

Peerless of America, Inc.
1501 No. Magnolia, Avenue
Chicago 22, Illinois, U.S.A.

PeeKay . . . the *Plasti-Kote* "Sprelf" says:

A little spray goes a l-o-n-g way!

PLASTI-KOTE SELF SPRAY FINISHES

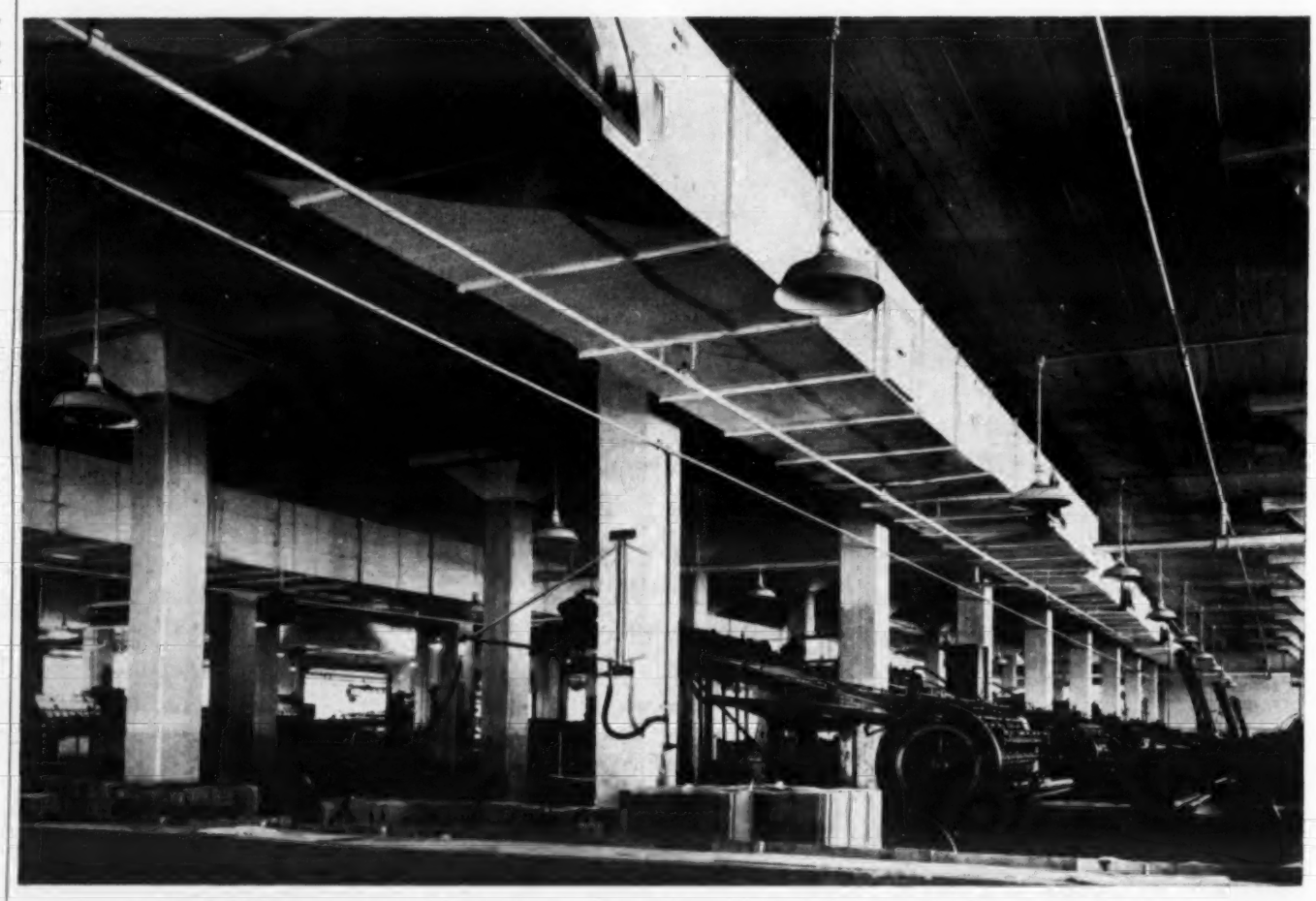
Solve your touch-up problems!

Paint and Pressure in one container. Ideal for touch-up and re-finishing.

PLASTI-KOTE, INC.
425 Lakeside N.W. Cleveland 13, Ohio

HOW AIR PRODUCTION PROBLEM FOR

Modern installation points up



Interior of Printing Department of the Corn Products Refining Company showing arrangement of ducts and air diffusers.

Temperature and humidity control are of prime importance to almost every printing plant . . . be it a large commercial establishment or the comparatively small printing plant of the type operated privately by many industrial and business concerns. Typical example is the Printing Department of the Corn Products Refining Company in Argo, Illinois. The plant is equipped to handle the printing of 25 tons of paper requiring a ton of ink in a 16-hour period.

PRODUCTION PROBLEM

Because paper is naturally hygroscopic, printing-plant operators often find themselves faced with the necessity of controlling temperature and humidity conditions within working areas or risk shutting down the presses. This was the case in the Printing Department. Whenever temperature and humidity were too far off normal, their printing operation suffered. So . . . to eliminate the difficulty, a modern air conditioning system was installed.

AIR CONDITIONING SOLVED IT

To maintain year-round design conditions of 80° dry bulb, 67° wet bulb (equivalent to 80 per cent relative humidity), engineers recommended installation of two 75-ton Vilter VMC Compressors operating on Du Pont "Freon-12" refrigerant. These machines provide a total

Odor Problems

Lack of Knowledge of Odor Sense Handicaps Researchers Who Strive To Find Ways of Eliminating Bad Odors, Conference Hears

NEW YORK CITY—No theory to explain what causes odors and how the human being detects them has won general acceptance, but the problem is an important one for the air conditioning industry.

This was brought out at the recent two-day conference here on Basic Odor Research Correlation sponsored jointly by the American Society of Heating and Ventilating Engineers and the New York Academy of Sciences.

As the name implies, purpose of the conference was to review results to date of basic research on the odor problem and by so doing to stimulate broader and more intensive studies. Ultimate aim is a complete understanding of odors and development of methods to control them.

The relatively meager knowledge of the odor sense was pointed up by one of the 25 speakers who said, "man can make an artificial eye—the camera—and an artificial ear—the microphone—but no chemist has yet made an artificial nose."

Reporting on the problems of odors in public buildings, another speaker, W. E. Reynolds, commissioner of public buildings of the U. S. General Service Administration, referred to the "rather baffling problems of staleness and stuffiness in air conditioned space served by the most skillful use of mechanical equipment."

ASHVE's interest in the odor problem, explained Cyril Tasker, the society's director of research, stems from the fact that when conditioned air is recirculated within an occupied space, it takes up odors from people, furnishings, food, tobacco, and other substances.

Thus questions relating to the perception of such odors, the effects of environmental factors on their intensity, and methods for their control are of fundamental interest to the air conditioning, heating, refrigeration, and ventilating industries, he said.

General chairman of the conference was Capt. Albert R. Behnke, commander of the U. S. Atlantic Fleet's submarine force.

Chairmen of the various sessions included A. B. Hubbard of the advance engineering section, General Electric Co.'s Air Conditioning Division; Dr. Amos Turk, director of research, Connor Engineering Corp.; George W. Meek, representing ASHVE's Basic Odor Research Subcommittee, and Haldane Gee, director of Bacteriology and Toxicology, Foster D. Snell, Inc.

First session of the conference was devoted to basic types of industrial odor problems. It featured talks on odor control in the cigarette industry, in processing protein foods, and in the paper industry.

"Foreign odors in tobaccos arise from the use of insecticides, the use of inadequate and defective curing equipment, storage along with or near odoriferous materials, the failure to protect the tobacco from the action of micro-organisms, allowing it to be contaminated with foreign materials which create unpleasant odors on burning, and the use of either poorly designed or inadequate air conditioning systems," declared Dr. F. R. Darkis of Liggett and Myers Tobacco Co.

"In air conditioning systems, you must use as much fresh air as possible, as little recirculated air as possible, and the air must be thoroughly scrubbed to prevent imparting an undesired odor to tobacco," he said.

"Activated carbon," according to Dr. Herman W. Dorn of the food and drug consultants, Dorn & Co., "is the best absorbent of odors, provided the proper carbon is used for the specific odor involved."

"Odors in paper are troublesome in various ways," pointed out Dr. Ernest Reed of Syracuse university. "Some papers are manufactured for the purpose of becoming food containers, and any off-odor in a food container may be declared as adulteration, besides the fact that it may be considered undesirable on the part of the consumer of the food from the container.

"Odors in paper," he explained, "are caused by organisms and also by added chemicals and other causes. An 'odorless' paper, incidentally, is a paper with 'natural' paper odor," he added.

3 ODOR CONTROL METHODS

Discussing odor modifiers, Ernest Lawson of Fritzsche Brothers, Inc., said that odor control includes elimination of odor by mechanical or physical means; by chemical means, or by odor masking or modification with aromatic materials.

"In the first method odor-bearing substances are mechanically eliminated by washing or filtering and are effective methods in industrial plants," he said.

"Chemical treatment, where applicable, controls bacterial decomposition and the resulting odor, but the hazards to human, animal, and plant life leave much to be desired in this method.

"In the third method, aromatics consisting of essential oils, isolates from essential oils, and other aromatic components can be utilized to advantage.

"Odor control methods with aromatic modifiers have been adopted with success to public restrooms, theaters, and restaurants, and may be utilized through air conditioning systems. Field tests," he added, "point the way to a promising method for controlling odors in industrial plants with aromatic odor modifiers."

Problems of odor research from the viewpoint of the scientist were outlined by the next four speakers.

Speaking for the physiologist, Prof. Lloyd M. Beidler of Florida State university, reviewed the problem and explained, "there is little information yet because most physiologists haven't been interested in the olfaction problem. Further, it is a difficult problem and may take years of study and research without results."

The psychologist's views were presented by Dr. Bernice M. Wenzel of Barnard college, Columbia university.

Instruments and techniques that the physicist will need in odor studies were discussed by the next speaker, Dr. Joseph Greenspan of Process and Instruments.

"During the past few years many instruments for 'trace analysis' have been developed," he said. "Some of these instruments should be directly applicable to odor research, while others may require modification."

The chemist's approach was outlined by Dr. James B. Sumner, director of Cornell university's laboratory of enzyme chemistry and a Nobel prize winner.

Two papers were presented by title only. One, discussing the need for odor control in aircraft, was prepared by Dr. C. R. Spealman of the Civil Aeronautics Administration. Devoted to hotel odor problems, the other was prepared by Edward J. Kenney of York Research Laboratories.

THEORY ON WHAT MAKES SOME SUBSTANCES HAVE ODORS

A theory to explain what makes some substances have odors was presented by Dr. R. W. Moncrieff of Scotland.

"To be odorous at all," he said, "a substance must satisfy two criteria: (1) it must be volatile, (2) it must be soluble in the fatty tissues of the nasal apparatus.

"But there are many substances that fulfill these two conditions, but which lack smell; water and glycerine are typical of them. What other condition or conditions must be met? Is it some feature of chemical constitution? Many relations have been found between odor and constitution but anomalies and exceptions have also been found.

"Perhaps the shape of the molecule determines whether a substance will be odorous," suggested Dr. Moncrieff.

The next four speakers discussed the status of present knowledge of the olfactory process itself.

"Receptor Mechanism—the Olfactory Area and the Olfactory Receptor Process" was described by Jean F. Mateson of Airkem, Inc.

"The Neural Apparatus Underlying Olfactory Perception," was outlined by Carl Pfaffmann of Brown university; "Functions of the Olfactory Brain" by Karl Pribram of Yale university; "Physiology of Olfaction in Insects" by V. G. Dethier of Johns Hopkins university, and "An Information Theory of Olfaction" by R. M. Hainer, A. G. Emslie, and Ada Jacobson of Arthur D. Little, Inc.

The latter described a theory which "suggests that, as a result of the 'on or off' property of neurons, any given odor gives rise to a characteristic configurational pattern in the olfactory bulb among 24 distinct types of neurons each of which is represented by 1,900 separate and parallel nerve fibers.

"The experience of odor intensity depends on the fraction of equivalent fibers activated, the exact information of which is unsuitable for the learning process and for complete storage. Odor quality, therefore, is represented discretely with precise memory, while odor intensity is more or less continuous and cannot be permanently remembered."

Third session of the conference, which was devoted to the "status of subjective and objective measurement techniques" was opened by Dr. Richard L. Kuehner of York Corp. who discussed "The Validity of Practical Odor Measurement Methods."

'PROGRESS MUST BE MADE DESPITE UNCERTAINTIES'

Although there are "uncertainties in basic odor knowledge," Dr. Kuehner emphasized that "progress must be made in such studies in spite of these limitations. The air conditioning field, in its broadest sense, sees the need to evaluate new and extant deodorants as adjuncts to, or substitutes for, outside ventilating air."

A scheme for odor identification in which major reliance is placed on human response was also described by L. C. Cartwright and P. H. Kelley of Foster D. Snell, Inc. This method depends primarily on a panel whose members are selected and trained for each individual investigation.

Problems of collection and analysis of odorants from air were reviewed by Dr. Amos Turk, director of research for Connor Engineering, who explained that "identification of components from a mixture of collected odorants may be made by physical, chemical, and spectrometric methods . . .

"Atmospheric odorants, however, are such complex mixtures that their complete analysis by composite spectra is not yet possible. It is, therefore, necessary to collect sufficiently large samples for preliminary fractionation steps before spectral analysis, if complete identification of components is desired."

CORRECTION

In specifications of the Westinghouse "Unitaire" commercial package air conditioners, published in the April 13 issue of AIR CONDITIONING & REFRIGERATION NEWS, the motor-compressor unit used in the Westinghouse equipment was designated as "semi-hermetic."

Officials of the Sturtevant Division, Westinghouse Electric Corp., state that this is in error—that the unit used should be designated as a hermetic. Their statement says:

"The current Equipment Standards of the Air Conditioning & Refrigerating Machinery Association lists the following definition:

"'A hermetic type compressor unit is a mechanical compressor unit consisting of a compressor and motor, both of which are enclosed in the same housing with no external shafts nor shaft seals, the motor operating in the refrigerant atmosphere.'

"The Westinghouse motor-compressor unit is this type. In fact, Westinghouse pioneered the hermetically-sealed air conditioning compressor in 1935-1936."

CONDITIONING SOLVED

INDUSTRIAL PRINT SHOP

another profitable market

of 150 tons' capacity. Cooling is done by direct expansion with coils placed in the main plenum. A total of 70,000 cubic feet of air per minute can be put through the coils.

The system adequately serves the print shop located in a building 270′ x 130′ x 15′ with a floor area of 35,000 square feet and cubage of 500,000 feet of cooled space.

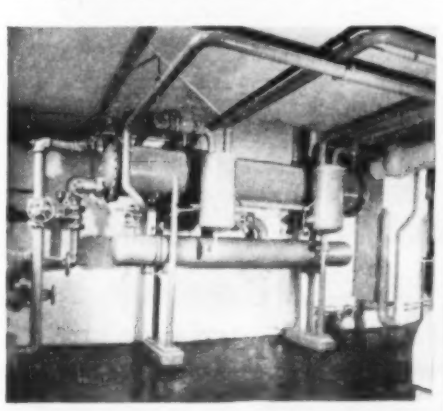
FLEXIBILITY A FEATURE

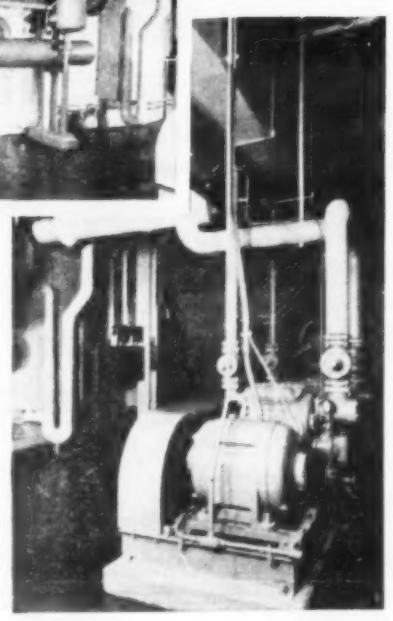
Since one unit of the installation produces sufficient cooling to meet average load requirements, the second unit is normally used only when peak loads become necessary. This flexibility in operating the system serves as additional insurance against any possibility of breakdowns.

GOOD MARKET FOR EQUIPMENT

What with mounting production costs in practically every branch of business and industry, scores of organizations have already undertaken the printing of their own catalogs, sales-promotional literature, office forms and other material. Many more are considering the idea. In almost every instance, conditioned air is required for the most efficient and economical operation of the plant.

So it stands to reason . . . here is still another promising market for air conditioning equipment of many different types. Some systems may be relatively small . . . others quite sizeable. But in any event, it should prove well worth the effort to make up a list of business houses and industrial plants in your own trading area, and to sound them out. Many may now have expansion programs that include a print shop. Talk with engineers, shop foremen, purchasing agents, advertising managers. You'll often line up many excellent prospective buyers.





Above photo shows condenser at top with receiver below. Expansion coil enclosure is in back of receiver at bottom.

At right are two 75-ton model VMC Vilter compressors operated with "Freon-12" refrigerant.

Importance of "Freon" Refrigerants

Then, when you get around to discussing specific equipment for the systems being considered, remind your customer why it is so important to select machines operated with Du Pont "Freon" refrigerants. Explain that these refrigerants are entirely safe . . . nonflammable, nonexplosive, virtually nontoxic and of dependable, uniform quality assured by carefully controlled laboratory methods of manufacture. These are inherent qualities of "Freon" refrigerants that aid in prolonging the economical, efficient operation of air conditioning installations over long periods of time. In addition, of course, "Freon" refrigerants meet all building-code requirements. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

KINETIC

"FREON" SAFE REFRIGERANTS

"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants

WALL WIRE PRODUCTS COMPANY

A FOREMOST NAME IN THE MANUFACTURE OF DIVERSIFIED WIRE PRODUCTS OF SUPERIOR QUALITY

*

STANDARD AND LIGHT WEIGHT SHELVES OF ELECTRO-POLISHED SOLID STAINLESS STEEL

*

REFRIGERATOR SHELVES WITH CHROME PLATE, ZINC PLATE, PRO SEAL, TIN, OR PORCELIZED FINISH

*

WIRE GRILLES • DISPLAY FIXTURES • GUARDS • BASKETS OF ALL TYPES FOR ALL PURPOSES STEEL STAMPINGS • MISCELLANEOUS FORMED AND WELDED WIRE ASSEMBLIES ARC WELDED ASSEMBLIES.

WALL WIRE PRODUCTS CO.
PLYMOUTH, MICHIGAN

Penn Controls' Canadian Subsidiary Completes Move to New Plant

TORONTO, Ont., Can.—Penn Controls, Ltd., Canadian subsidiary of Penn Controls, Inc., has completed the moving of its entire operation into a newly constructed modern factory and office building at 929 Warden Ave., Scarboro, Ont. on the eastern outskirts of Toronto.

The new building was built to provide space for expansion of the rapidly growing Canadian operation and to give better service to Penn's Canadian customers. The present move marks the third time since its inception in 1946 that the Canadian company has outgrown its plant facilities and moved into larger quarters.

The new plant, a masonry and steel structure incorporating the latest techniques in factory and office building construction, is situated in the midst of a huge plant expansion area along Eglinton Ave. East, a post-war industrial development known as Canada's "Golden Mile."

Fully equipped for fabrication and assembly of the standard product line, Penn's new building, designed and constructed under the direct supervision of Arthur H. Hills, vice president and general manager of the Canadian operation, will provide currently needed expansion as well as facilities for future expansion and development.

Roger Bay Becomes Sales Manager for Bonney Tool

ALLENTOWN, Pa.—Roger O. Bay, widely known in the automotive industry, has been named sales manager of the Tool Div. of Bonney Forge & Tool Works here.

The appointment was announced by Ellis J. Wright, vice president and sales manager of the Miller Mfg. Co., Detroit, of which Bonney is a wholly-owned subsidiary.

Bay, formerly sales manager of the automotive division of Cleveland Pneumatic Tool Co., will direct sales of Bonney mechanics' hand tools in the automotive, refrigeration, industrial, hardware, farm equipment, and marine markets. He will make his headquarters at the Bonney home offices in Allentown.

Parts, Equipment Wholesaler Uses Supermarket Sales Techniques

From 50-Ton Units to Small Parts Are Sold Self-Serve; Customer Sees What He Buys

NEWARK, N. J. — Supermarket selling techniques have been introduced by a refrigeration and air conditioning supplies and equipment wholesaler who displays and sells everything from safety valves to 50-ton self-contained central station equipment on a self-service basis.

This approach to merchandising followed a move to new and larger quarters at 195 Central Ave. by W. I. Freeman & Co., which was recently appointed distributor in New Jersey by the United States Air Conditioning Corp. and also handles the lines of Tecumseh Products Co., Acme Industries, Marley Co., and other leading manufacturers in the refrigeration and air conditioning supplies and equipment field.

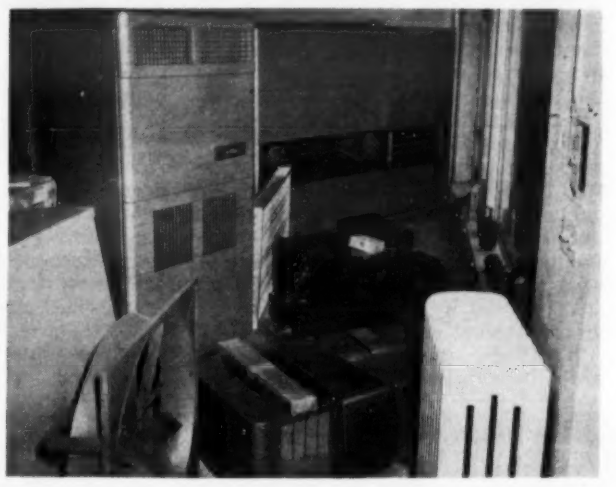
"The customer is entitled to see what he's getting before he buys, even in air conditioning and refrigeration equipment," W. I. Freeman, president of the company, declares.

"Our customer has the opportunity to pick out the equipment that looks the best to him. He doesn't have to wait for service either, but can collect what he wants and check out his entire purchase at the same time.

"This type of selling is also expected to boost our sales volume through 'impulse buying' by customers browsing around the store," Freeman says.

Hand in hand with the self-service and merchandise display idea is the company's policy of keeping a complete stock on hand. Immediate availability of equipment often means the difference between making and losing a sale to the retailer or dealer.

SELF-SERVICE displays in parts section of W. I. Freeman & Co. permit customer to make his own selection and inspection. Wholesaler says "impulse buying" is important.



HEAVIER EQUIPMENT, such as these UsAirco packaged units (room cooler, center foreground, upright conditioner, left, and Refrigerated Kooler - aire, rear), is displayed in another part of the Freeman store and is visible through all-glass store front. Wholesaler keeps complete stock on hand to back up customers' sales.

The new selling technique is already paying large dividends, according to the wholesaler. Its attractions, together with the sales increase due to the addition of the new lines are expected to increase their volume for 1953 by at least 25% over last year.

The Freeman quarters front 100 ft. on Central Ave., a main Newark thoroughfare, and contain 6,000 sq. ft. of space, including a full basement for storage of stock. Display windows along the avenue are arranged with a representative showing of large and small equipment. A specially designed freight elevator speeds movement of equipment from the basement to the selling floor.

One section of the store is devoted to the smaller equipment, which is displayed on sales counters similar to those used in department stores and supermarkets. The larger equipment is shown in an adjoining room where it can be thoroughly inspected prior to purchase.

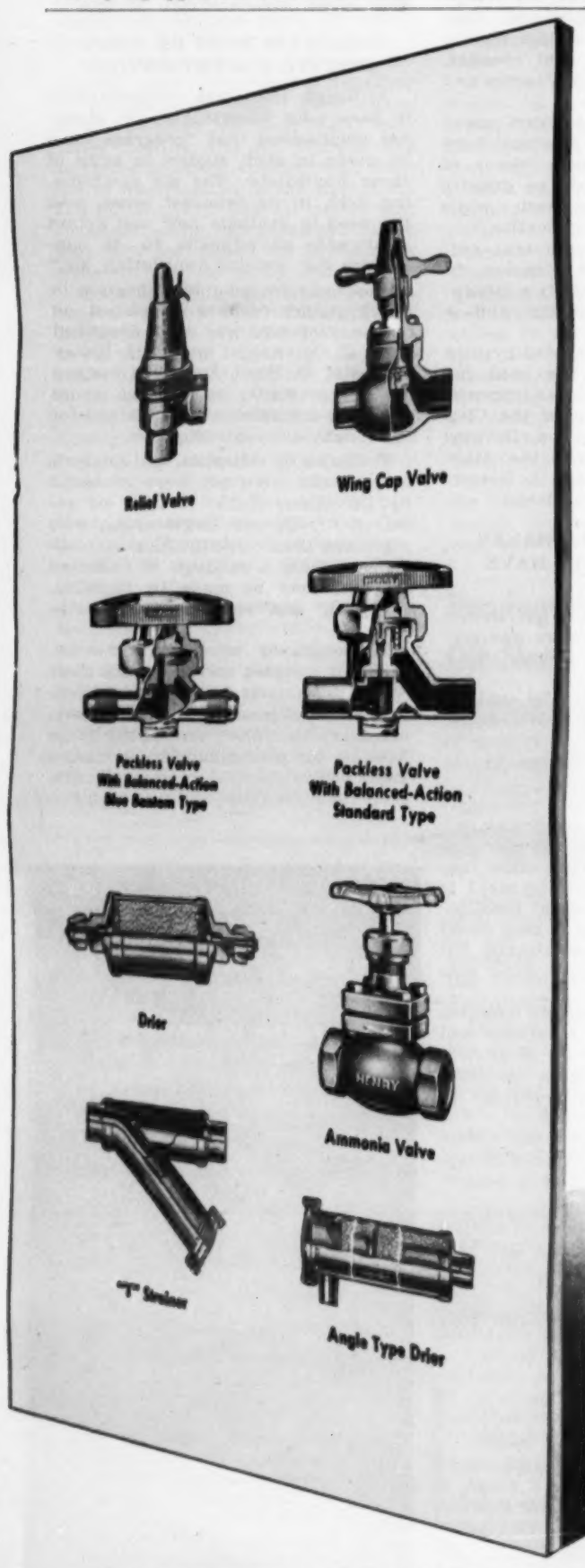
Freeman, who has been identified with the air conditioning and refrigeration supply field for many years, founded the company in 1945, at 69 Central Ave. The new quarters, in addition to providing increased space, is equipped with parking facilities for the convenience of customers.

Mortell Names 3 Officials

KANKAKEE, Ill.—J. W. Mortell Co. here, manufacturer of sound deadeners and protective coatings, has announced the appointment of T. P. Fitzpatrick as vice president and general manager, E. F. Gerrity as sales manager, and R. A. Dixon as assistant treasurer.

Hotel Cooling Project Starts

CLEVELAND—The Lincoln room and lounge of the Wade Park Manor here is being air conditioned and remodeled, according to O. C. Obetz, manager. The Lincoln room is the hotel's dining room.



Back of These Products

is a name

that you can trust

HENRY

VALVES, DRIERS & STRAINERS

HENRY VALVE CO.

HENRY VALVE CO CONTROLLING FLOW SINCE 1913A

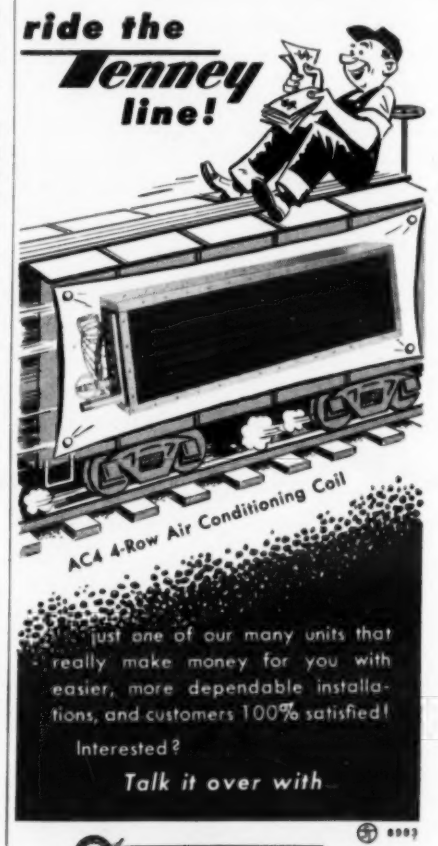
MELROSE PARK, ILL. (Chicago Suburb)
CABLE: HEVALCO MELROSE PARK, ILL.

Valves • Driers • Strainers • Control Devices and Accessories for Refrigeration, Air Conditioning and Industrial Applications

CAN YOU USE A REPRESENTATIVE IN SOUTHERN CALIFORNIA?

I am now available as representative or agent for manufacturer supplying the refrigeration, air conditioning or heating trades. Twenty years in the wholesale end of the industry. Write Huntington Small, 1811 Whitley Ave., Hollywood 28, Calif.

ride the Tenney line!



just one of our many units that really make money for you with easier, more dependable installations, and customers 100% satisfied!

Interested?

Talk it over with

Tenney

ENGINEERING, INCORPORATED

Dept. E, 26 Avenue B, Newark 5, New Jersey

Get it!

HARRY ALTER'S

SPRING and SUMMER ... No. 158

DEPENDABOOK

Illustrates, Describes, Prices Over 9,000 REFRIGERATION, Television, Radio, Heating, Electric Motor, Air Conditioning PARTS and Supplies

WHOLESALE ONLY

Yes, get it and save money!

Write Now to

The HARRY ALTER CO. Inc.

1728 South Michigan Avenue, Chicago 16, Illinois

134 Lafayette Street, New York 13, New York

HARRY ALTER gives you snappy service!

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

outshone him forensically on this occasion. Romulo especially. The Philippine delegate to the United Nations surely is one of the outstanding orators of our generation. What a spellbinder he must be in his native (Spanish) tongue!

Most memorable impression of MacArthur was that of incredible YOUTH. Rivalling him in that category was Gene Tunney. The latter looks, and acts, like a heavyweight boxing champion in the prime of life. Didn't seem a day over 30. Several of us were willing to bet Tunney could whip "Rocky" Marciano right now.

Other interesting men at the dinner: DeWitt Wallace, editor of *Readers Digest;* Milton Reynolds, who introduced the ball-point pen; high-tenor Morton Downey; exporter Arthur Rocke; airlines tycoon Juan Trippe; Generals Courtney Whitney, George Kenny, and Bill Donovan; sportsman merchantilist Bernard Gimbel; and America's most versatile journalist, Bob Considine.

We report this shinding, not to Name Drop, but to add proof to a long-time "Dope" contention, viz.:

You never really know a man unless you catch him in a relaxed moment.

The "front" a person puts up often isn't "the McCoy."

How Observant Are We?

Modern courts rely upon the testimony of witnesses. So do businesses, especially those which lean heavily upon "consumer research."

Question: how accurately does anyone observe what's going on around him?

Three weeks ago eight men were seated around one of 12 dinner tables at the Fort Shelby Hotel in Detroit. One fellow excused himself and left the room. In the hallway he bumped smack into a waiter bearing a large tureen of soup. His suit and shirt were ruined. Fortunately an assistant manager provided him with a fast change of attire.

Our man had departed wearing a blue suit and white shirt. He returned in ill-fitting grey flannels and a garish pink shirt. Nobody in the crowd noticed the difference, and a hour passed before he ribbed us about our blindness, and told his story.

Now get this: the seven other men seated at his table were: Arthur "Red" Motley, brilliant publisher of PARADE magazine; Brewster Campbell, cogent city editor of the *Detroit News;* Stoddard White, cultured assistant editor of the *Detroit News;* canny Robert Powers, publisher of *Ward's Automotive Reports;* distinguished Lee White of the Cranbrook schools; Powerhouse Bill Power, advertising manager of Chevrolet; and, yes, dammit, "Inside Dope."

Every man at our table was a trained reporter, and proud of his "roving eyes." Furthermore, the entire private dining room was filled with experienced journalists. None noticed the change of attire.

How reliable is testimony? How much faith can be put in the "reporting" done by less well-trained consumer researchers?

Out of Our Mailbag

Toronto, Ontario, Canada

Mr. "Dope":

I read with amusement your article which appeared on Page 1, April 13th issue, entitled "Telephone Technique."

Anyone making a telephone call, particularly pertaining to business, should be sufficiently courteous to announce himself to the person answering the phone saving everyone time, temper, and embarrassment.

The form suggested by the telephone company—"May I have your name, please?" seems to be less irritating than "Who's calling, please?"

Just a suggestion which is passed along.

A Honey and Sugar Girl

Rapid Service Co.
Ocala, Florida

The enclosed item appeared in our evening paper, April 20th. The name —*Ocala Star Banner.*

I thought you might be interested to know that your parking lot is not safe if you travel through Ocala, Fla.

I got a kick out of this.

I sure enjoy reading your column "Inside Dope."

ROSE LAWLOR

The item:

"Willie Fleming, 48, city of Ocala employe, has entered a damage suit for $50,000 in circuit court here against R. L. Marsh and Marsh-Colbert Appliance Co.

"The suit arises from a mishap last Oct. 11, 1952, in which Fleming alleges he was struck down by a truck, driven by Willard Desha, employe of Marsh. Fleming was working with a city crew grading driveways at the new First Methodist Church building on Ocklawaha.

"The truck run off the street and hit Fleming in the church parking lot, he charges. As a result, Felming suffered fractured leg, arm, and ribs, plus other injuries, and permanent damage to his nervous system."

Chicago, Ill.

Dear "Dope":

Apropos of the "Gag of the Week" in your column (date April 13) sometime ago, the same thing occurred right here in Chicago on the south side when the SINCLAIR sign had the "C" omitted.

Thought it might be good for another "gag."

Find this column very interesting.

A. KAVIN

Oh, No! Department

Rest Room Advertising Company has been formed in Portland, Ore., to place advertising posters on appropriate walls.

Universal Diffuser Moves, Adds 12 Sales Agents

NEW YORY CITY—Universal Diffuser Corp. here has moved to a new plant at 1360 Garrison Ave., New York 59, N. Y., which provides 10,000 additional sq. ft. of manufacturing facilities for production of "Flexiflo" air diffusers, Charles Davies, president of the firm, announced recently.

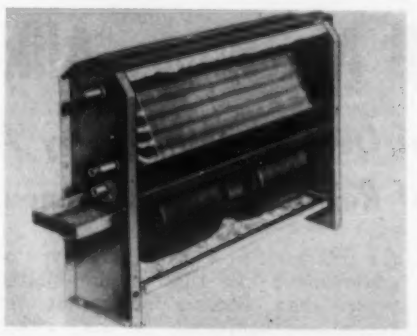
Davies also announced that Universal Diffuser had recently appointed 12 new sales agents. The new sales agents and their territories are as follows:

Airite Engineering Co., Rhode Island; A. B. Banowsky, Houston, Texas; Barton Refrigerating Co., Indianapolis; J. L. Brown, Little Rock, Ark.; Richard A. Farr, Columbus, Ohio; Irvington Co., Buffalo; Duncan G. MacLean Co., Yakima, Wash.; Miller-Spann & Co., North and South Carolina; Pacific Air Control, Portland, Ore.; Henry S. Parks Co., Salt Lake City; Thermalair Engineering Co., Michigan; and H. V. Witherspoon, Baltimore and Washington, D. C.

New Statler Hotel In Dallas To Be Fully Air Conditioned

DALLAS—Fred F. Florence, president of Cosmopolitan hotel of Dallas, Inc., announces that contractors' bids will be asked May 1 on architects' plans for the new Statler hotel here.

Latest detailed report on the new hotel revealed that contractors will be asked to bid on a 1,001-room structure, air conditioned throughout.



Type of unit being supplied by Bush for Hartford Statler.

Bush To Supply 491 Cooling Units to Statler In Hartford

WEST HARTFORD, Conn. — The Bush Mfg. Co. here has announced receipt of a contract to provide 491 air conditioning units for the new Hotel Statler being erected in Hartford.

The units to be supplied are remote air conditioning units featuring individual room control, and are a recent addition to the Bush line. They utilize hot or chilled water and provide for year-round air conditioning: heating in winter, cooling in summer, and individually controlled circulation of filtered air for "between season" comfort.

The contract was awarded to Bush by Alvord & Swift of New York city, mechanical contractor for the new Statler Hotel.

Ace Handles Freez-King

ALBUQUERQUE, N. M.—Ace Refrigeration Service Co. here has been appointed distributor for the Freez-King Corp., manufacturer of continuous freezers.

Manual Covers Residential Cooling Estimates, Design

MILWAUKEE—L. J. Mueller Furnace Co. here, manufacturer of Mueller "Climatrol" heating and air conditioning equipment, recently released its new cooling design manual for estimating and designing residential cooling installations.

The manual "provides a simple, logical method of cooling design for residential work without using complicated formula," according to the company.

"The manual has been written for use by dealers, builders, and architects, or anyone concerned with the laying out of residential cooling systems.

It has been written to compare as closely as possible with the accepted method of calculating heat loss, except that it is based on heat gain.

"The simplicity of the new manual lies in the fact that heat gain calculations require basically the same consideration as heat loss calculations. The main difference between heat gain and heat loss calculations is that the effect of the sun in internal heat gains, which act as a safety factor for heating equipment, must be considered in providing for summer cooling.

"Also, the success of summer air conditioning equipment involves the removal of moisture from the air in the conditioned space.

In the manual there is a "step-by-step" design procedure. An explanation of each of the considerations for the steps in the procedure, and also the necessary tables for register, duct and equipment size, are included.

They ALL come to see the man with all THREE

—the EUREKA *Williams* dealer!

THREE FULL LINES of home comfort products put you way ahead. For one thing, you don't miss a sale—you can and do meet *every* customer's product preference. Another thing—there are no seasonal slumps when you're a Eureka Williams dealer. With OIL-O-MATIC and GAS-O-MATIC Heating *plus* AIR-O-MATIC Cooling it's "open season" for sales the *whole year 'round.*

If you're a progressive dealer with an eye to the future, try this combination. *One* famous name, based on thirty years of leadership—backed by *three* full lines—and boosted by *four-season* selling! Better write today for the profit-facts of the Eureka Williams Franchise.

OIL-O-MATIC Home Heating—with exclusive *Metered Low Pressure.* Complete line for homes of all sizes—for all types of heating.

GAS-O-MATIC Home Heating—with exclusive *Metered Flow Pressure.* Models for homes of every size, large and small.

AIR-O-MATIC Home Cooling—latest member of the famed Williams family. Installed with Oil-O-Matic, Gas-O-Matic or existing forced warm-air heating system to provide year 'round air conditioning at very low cost.

EW PRODUCTS

WILLIAMS DIVISION

Eureka Williams Corporation • Bloomington, Illinois

In Canada—Williams Oil-O-Matic of Canada, Ltd., Guelph, Ontario

Better Products, Better Made... *for better living!*

1 YEAR • 5 YEARS
10 YEARS

LOOK AHEAD

—and you'll buy VICTOR today!

- Model VUQ-18
- 18 cu. ft. Upright
- The ultimate in Freezer compactness
- Many exclusive selling features
- Cost *slightly* less without Inner Lids

Guaranteed by Good Housekeeping

...Send for details of this Victor Upright Quickfreezer and other items in the Victor line that mean More Sales ...More Profitable Sales for You

Victor

VICTOR PRODUCTS CORPORATION
HAGERSTOWN, MARYLAND
MANUFACTURERS OF THE FAMOUS VICTOR QUICKFREEZERS

All Machines Alike?

How Department of Defense and Industry Are Working Toward Standardization of Refrigeration Equipment Used In the Field

WASHINGTON, D. C.—Some day all refrigeration and air conditioning equipment used by the Department of Defense and other branches of the Federal government may be pretty much standardized.

And when this prevails, Company A's compressor, for example, could be pulled out of a spare parts pool near the fighting front and quickly bolted down in place of Company B's unit, say, that had been knocked out of commission by a bullet from a sniper's high-powered rifle.

When these things will come to pass is pure conjecture, but there is already under way a definite program to standardize refrigeration and other types of equipment used in the field by the Department of Defense.

The project is being done in accordance with an act of Congress, which last year voted into effect Public Law 436. This established within the Department of Defense a Defense Supply Management Agency (DSMA) having under its direction Offices of Cataloging, Standardization, and Inspection.

DSMA is required by law to develop a single military catalog and effect supply standardization. Its success in standardization will depend almost entirely on the cooperation of private industry, which is purely voluntary. To date cooperation from the refrigeration and air conditioning industry has been excellent.

The organizational setup required for this task in a democratic type of government like that of the United States can become somewhat involved and confusing, on the surface at least.

Here's how it's organized now (see accompanying chart):

DEFENSE SUPPLY MANAGEMENT AGENCY.

The Director of the Defense Supply Management Agency is responsible for:

a. The Military Standardization Program

b. The Military Inspection Program

c. The Federal Catalog Program

He is directly responsible to the Secretary of Defense. He is required to report progress in these programs to the Armed Service Committees of both the Senate and the House of Representatives twice a year.

OFFICE OF STANDARDIZATION (DSMA)

This office is charged with the responsibility of developing a military standardization program. The objective of this program is to reduce the number of types and sizes of equipment and attain maximum interchangeability. The Office develops plans, policies, and procedures governing this military program as well as supervising, administering, and directing it.

It assigns the different projects of the standardization program to activities of the military departments, or in some instances to task groups.

The Office of Standardization delegated certain responsibilities in the field type refrigeration and air conditioning equipment standardization project to the Quartermaster General's Office of the Army, at the request of the military task group studying this specific problem.

MILITARY TASK GROUP

The Chief of the Office of Standardization is required to make full use of technical and operational resources of the various military departments in order that his decisions may be based, to the fullest extent practicable, on factual experience data.

This need in the refrigeration and air conditioning project is fulfilled by the Task Group.

This group is made up of engineers representing all interested activities of the Army, Navy, and Air Force. It is an advisory group to the Office of Standardization. The members are authorities on the refrigeration and air conditioning needs and limitations of that branch of the armed service which they represent.

QUARTERMASTER GENERAL'S OFFICE

This office of the Army has been designated by the Office of Standardization as the agency responsible for obtaining factual data to assist in the Military Refrigeration Standardization Project. This designation was made upon the advice and recommendation of the Military Task Group.

QMC is responsible for collecting data and for the analytical presentation of that data for this project.

CONSULTANTS, INC.

This company is under contract to the QMC to assist in carrying out the QM's responsibilities on the standardization study of military field refrigeration and air conditioning equipment in the ¼-hp. range.

This contractual arrangement relieves the QM from increasing their technical staff which would be necessary in order for them to perform this temporary and specialized task.

INDUSTRY ADVISORY COMMITTEE

This committee is made up of a representative group of manufacturers selected from industry at large. They have the technical knowledge that is required in such a project.

The function of this committee is to advise the DSMA in the development of plans for attaining standardization of military refrigeration and air conditioning equipment.

They are guided by the objective of the military and practicability of accomplishing it in view of present industrial production; i. e., they are charged with providing recommendations for a practical solution to the problem.

SUBCOMMITTEES

Subcommittees are organized to make detailed engineering and basic standardization studies of the various components of the refrigeration and air conditioning systems. They are made up of members of industry who control the design of those components. The subcommittees make recommendations concerning standardization possibilities to the IAC.

GENERAL

The IAC and subcommittee memberships are shown on the chart. Those subcommittees shown without membership are in the process of being established by DSMA. Other subcommittees may be formed as they become necessary.

Rear Admiral Joseph W. Fowler (Ret.) is the director of the Defense Supply Management Agency. Nathan Brodsky is his deputy. Admiral Fowler is chairman of the Industry Advisory Committee.

Kenneth A. Simmons, Office of Standardization, DSMA, is the government liaison representative on the IAC. Simmons is also chairman of all subcommittees in this project.

The Office of the Quartermaster General is represented by Junius W. Millard who is Director of Research in their Mechanical Products Branch of the Research and Development Division.

In general, membership of the committees and subcommittees is selected to provide adequate representation of small, medium, and large companies, located so as to reflect broad geographical areas, a DSMA spokesman explains.

Perhaps the best expression of DSMA's over-all aims and problem was outlined recently by Rear Admiral Fowler, in Dun's Review:

"It may be well at this point to consider the actual responsibilities assigned the Agency by Public Law 436. In the area of cataloging, it is specified that the Agency shall name, describe, classify, and number each item repetitively used, purchased, stocked, or distributed by the Department of Defense or any of the military departments," he says.

"At first sight this may appear to be a relatively simple problem, but when one visualizes the vast number of items used and stocked by the military departments, and the wide differences in supply concepts among the various bureaus and technical divisions of the military departments which have been generated over a long period of time, along with the necessity for reconciling these variables if a common viewpoint is to be achieved, one begins to recognize the enormous difficulties facing those authorities who must achieve uniformity in cataloging, or in standardization.

DIFFERENT NAMES USED FOR SAME ITEM

"Take, for example, the naming of an item. It so happens that one type of large crane is called by two entirely different names in two of the military bureaus. At the same time, this identical piece of equipment has other names in industry. To comply with the law, it becomes necessary to develop a single name which will be recognized by all users of this equipment to the exclusion of all other names.

"This seemingly simple task is often very complicated. For instance, is a wooden container used for shipping any number of commodities, a drum, a hogshead, a barrel, a breaker, a cask, or a keg? The catalogers must decide.

"Once a name is decided upon, the item must be described precisely, for unless it is positively identified there will always be the chance of confusion in cross-servicing. To say a drum is a drum is not sufficient for there are drums which are shipping containers, drums which are musical instruments, drums which are parts for capstans, and drums which are parts for banjos, to take a simple example. The skipper of a destroyer would have little use for a snare drum if he were trying to get his winch in working order and had requisitioned a drum from an Army installation ashore. Precision in description is essential to a good catalog," emphasizes Rear Admiral Fowler.

'CROSS-SERVICING' COULD PERMIT ECONOMIES

"The possibilities for economy through cross-servicing are considerable. Navy ships carry items identical with those used by Army units ashore; Air Force ordnance items are interchangeable with some ordnance items of both the Army and the Navy; food, clothing, medical, electronic, and a host of other items are common to all the services.

"The development of a common

(Continued on next page)

Recently introduced, the new PENN single-pole refrigeration control is winning the enthusiastic acclaim of refrigeration men everywhere. And, one of the *big* reasons is SNAPFLEX contact action!

Only PENN has this exclusive contact structure which provides "roll-wipe-snap" action on closing and opening. Result? No bounce . . . no closing arc . . . no welding of contacts. What does this mean to you? Longer life and better performance than *any other* single pole control available!

Learn more about this new Series 270 *low-priced, single-pole control.* Ask your wholesaler or write **Penn Controls, Inc., Goshen, Indiana.** Export Division: 13 E. 40th Street, New York 16, N. Y., U. S. A. In Canada: Penn Controls Limited, Toronto, Ontario.

PENN AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

New SHOPPING CENTER Uses FRICK Air Conditioning Throughout

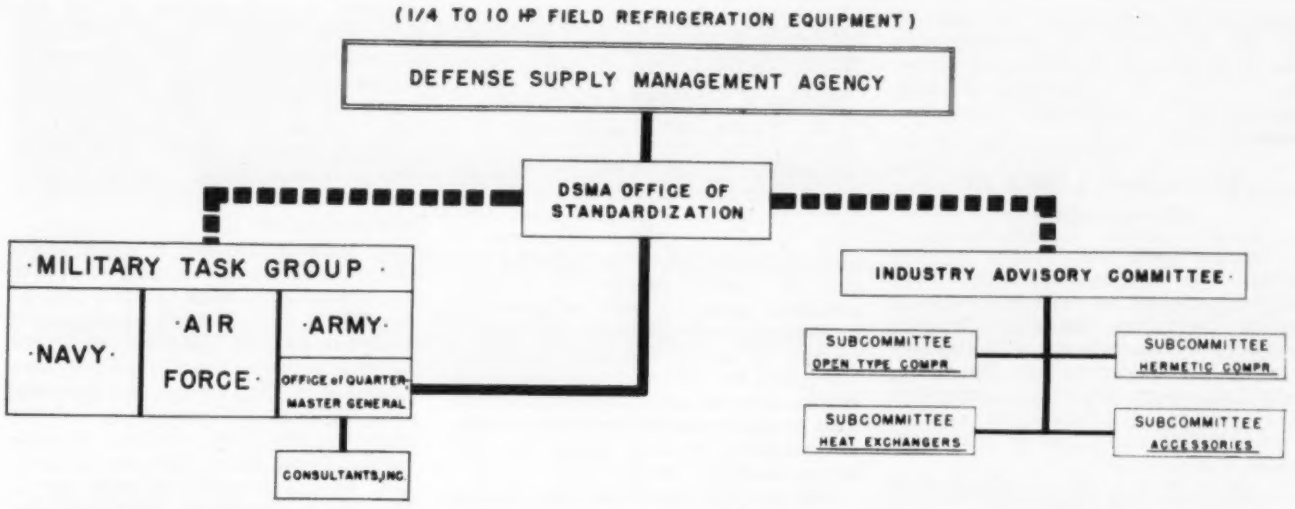
The eleven stores in the big new Freedom Shopping Center in Baltimore, built and owned by Henry J. Knott Enterprises, are all kept cool and comfortable with Frick Unit Air Conditioners. Several of these are tied-in with heaters for year-'round use. Installation by the Paul J. Vincent Co., Baltimore Distributors who have put Frick Air Conditioning in over 100 theatres.

Frick Units, like this one in the Beauty Salon, Air Condition all the Shops at Freedom Center.

Frick Refrigerating and Air Conditioning Equipment can solve YOUR cooling problems equally well. Write

DEPENDABLE REFRIGERATION SINCE 1882
FRICK CO.
WAYNESBORO PENNA. U.S.A.

Also Builders of Power Farming and Sawmill Machinery



ORGANIZATIONAL CHART shows relationship of various government agencies and industry advisory groups cooperating in the initial phases of standardization project for military field refrigeration equipment in the ¼ to 10-hp. range. Personnel announced thus far includes the following:

Defense Supply Management Agency
J. W. Fowler, Director.
N. Brodsky, Deputy.

DSMA Office of Standardization
R. A. Moody, Chief.
K. A. Simmons, Liaison.

Military Task Group

Army
H. W. Wilson, Transportation Corps.
M. H. Abernathy, Signal Corps.
F. Boucherer, Signal Corps.
B. D. Pile, Medical Corps.
S. J. Weidenkopf, St. Col., M. S. C.
P. C. Gertas, Ordnance Corps.
F. A. Peckham, Engineer Corps.
A. N. Johannesen, Quartermaster Corps.
J. T. Byrnes, Engineer Corps.
R. L. Wagner, Ordnance Corps.
H. Graus, Engineer Corps.

Navy
E. H. Honeggar, Bureau of Ships.
A. L. Graul, Bureau of Yards & Docks.
R. E. Pessaud, Bureau of Supplies & Accounts.
T. R. Freeman, Capt., U.S.M.C.

Air Force
W. T. Smith, Headquarters.

Industry

Advisory Committee
D. French, V.P. Chg. Engrg., Carrier Corp.
R. F. Laurer, V.P. Chg. Engrg., York Corp.
C. Ploeger, Chief Engr., Servel, Inc.
B. S. Booher, A.C. Engr., Frigidaire Division, G.M. Corp.
J. L. Ditzler, Engrg. Mgr., Westinghouse Electric Corp.
S. D. Lovely, Chief Engr., Airtemp Division, Chrysler Corp.
L. W. Larsen, Sales Mgr., Tecumseh Products Co.
C. L. Coulter, Asst. to Pres., Lehigh Mfg. Co.
O. H. Buschmann, Chief Engr., Copeland Refrigeration Corp.
F. Hawk, V.P. Chg. Sales, Brunner Mfg. Co.
K. A. Gould, Chief Refr. Engr., General Machine & Mfg. Co.

Hermetic Compressor Subcommittee
K. A. Simmons, Chairman, DSMA.
C. Ploeger, Servel, Inc.
T. G. Foster, Carrier Corp.
A. Ruth, Lehigh Mfg. Co.
O. H. Buschmann, Copeland Refrig. Corp.

Open Type Compressor Subcommittee
K. A. Simmons, Chairman DSMA.
L. W. Larsen, Tecumseh Products Co.
J. L. Ditzler, Westinghouse Electric Corp.
O. H. Buschmann, Copeland Refrig. Corp.
R. F. Lauer, York Corp.
C. Ploeger, Servel, Inc.

Standardization Program--

(Continued from preceding page)

language of supply will result in mutual supply reliance among the services which may determine the effectiveness of our fighting machine at war, and will result in efficiency and economy in time of peace. Stocks of replacement parts carried by one service during foreign duty can be reduced if that service knows that such parts can be obtained from elements of another service in the same theater; adjoining installations of different services can share common stocks of many items in common warehouses, thus resulting in smaller inventories and reducing cost in space, handling, personnel, and paperwork; recognition of commonness among items required by the military departments will permit consolidation of requirements and bulk procurement which may result in lower cost per unit. . . .

"Many people, including wellinformed supply management personnel, have felt that the establishment of a Federal Catalog would be the answer to all the ills of supply management. However, this is far from the case. The Federal Catalog merely identifies the items that are actually in the system and, although great improvements have already been made through the discovery and elimination of duplicates during the process of cataloging, when the catalog is finally compiled it becomes evident that the work has just begun.

"It is here that standardization begins to contribute to the over-all project. In the field of standardization, it is the responsibility of the Director, Defense Supply Management Agency, to achieve the highest practicable degree in standardization of items used through the Department of Defense, through the development and use of single specifications, in the elimination of overlapping and duplicating item specifications, and in the reduction of the number of sizes, kinds, or types of generally similar items. Two other activities come within the purview of the responsibilities of the Office of Standardization: inspection and packaging.

"Thus, after cataloging has established what items are in the system, the Office of Standardization makes a careful examination of these items to: first, find out how many items are so nearly identical that for all practical purposes they can be identified as the same item; and, second, make a further examination to see whether it is possible to reduce the variety of items so that the material purchased and stocked by the military departments can be materially reduced while, at the same time, providing sufficient variety to insure that the needs of actual military requirements will be met.

"To illustrate, it has been discovered, while cataloging in a certain category, that there were in excess of 800 items actually in the supply systems. A careful examination showed that it would be possible to so classify the nearly identical items as to reduce the actual items to approximately 200. Further examination as to the possibilities of variety reduction resulted in a final insertion in the Catalog of only 50 items, or slightly more than 6% of the original category," he continues.

"This study can now be followed by an analysis of the specifications covering these items. Concurrent with the elimination of items, there can be a material reduction in specifications. In this process, the final specification adopted is subjected to thorough evaluation to make sure that it is, in fact, a good, sound, clear specification which can be used for supply purposes.

"The proposed specification is carefully considered by all of the military departments concerned to make certain that it will meet all their needs. Then, having been concurred in, its use is made mandatory upon every purchasing officer in the military departments when buying items of this class. . . .

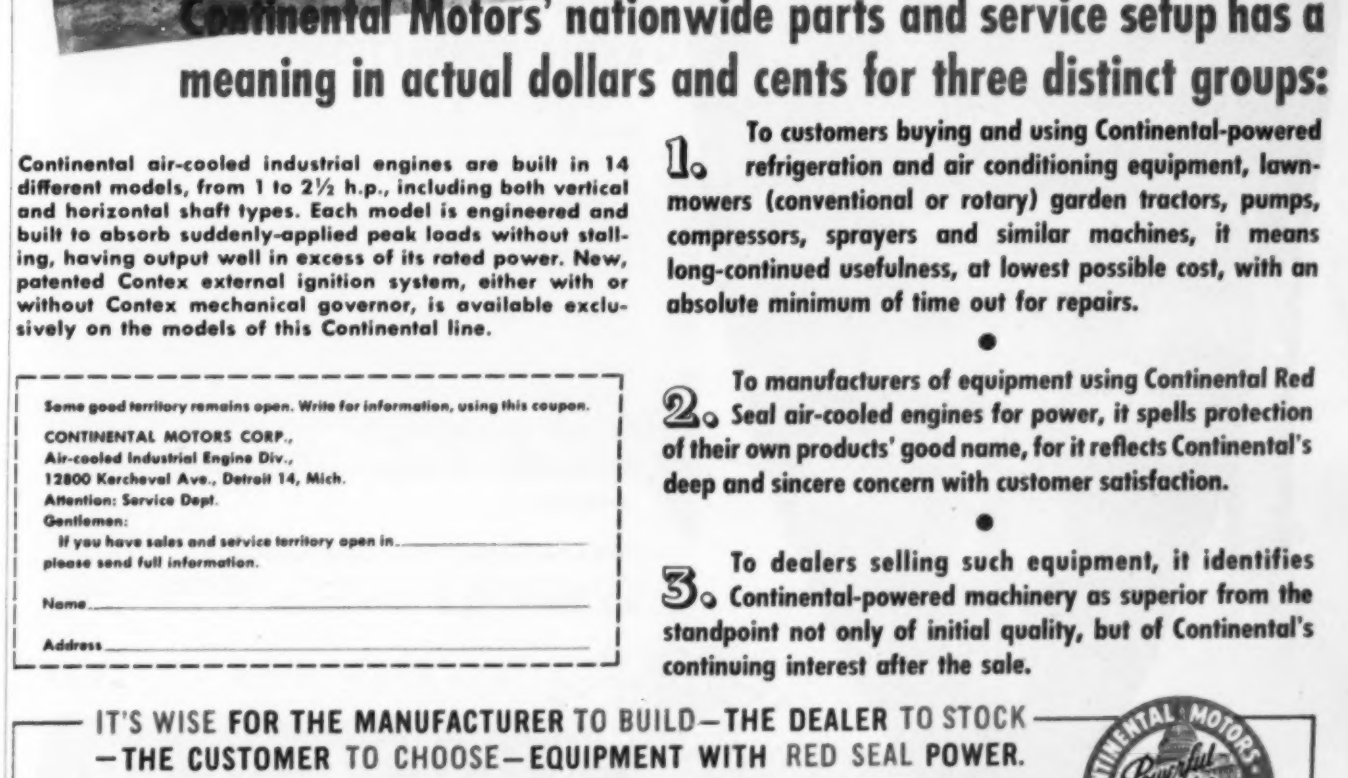
"One of the greatest headaches in military supply is that of diversity in spare parts required to maintain equipment domestically and, even more important, in foreign theaters of war. If there are twelve different types of heavy mobile cranes in the field, it has been necessary to maintain twelve different types or sets of spares to make sure that all of these pieces of equipment could be kept in full operating condition. This, of course, has been extremely expensive and frequently has resulted in the total immobilization of critically needed equipment due to nonavailability of the replacement parts for that particular make or model.

"One of the industry advisory committees of the agency is in the field of internal combustion engines, and some time ago, in conjunction with representatives of the Office of Standardization, this group began a study of how the number of types of spare parts could be reduced for this type of equipment. They limited the first examination to internal combustion engines ranging approximately from 3 to 4 in. in bore.

"After a prolonged study, conducted for the most part by members of industry themselves representing over 50 companies engaged in the manufacture of internal combustion gasoline engines for sale both to government and private concerns, this committee achieved the following amazing results.

"Whereas formerly it was necessary for the government to stock 1,187 different types of high-mortality parts such as pistons, valves, rings, bearings, and so on, the committee study revealed that the number of such spares necessary for the government to carry in order to insure the continued operation of all the various makes of largely internal combustion gasoline engines would be reduced to 59. This study, conducted by and in cooperation

(Concluded on Page 12)


Every Equipment User
FROM HERE TO THERE
has CONTINENTAL SERVICE CLOSE AT HAND
This station wagon, completely equipped for the demonstration of Continental Motors air-cooled industrial engine servicing procedure, is used as a traveling school for the sales and service personnel of distributors and dealers throughout the United States and Canada.
Continental Motors' nationwide parts and service setup has a meaning in actual dollars and cents for three distinct groups:
Continental air-cooled industrial engines are built in 14 different models, from 1 to 2½ h.p., including both vertical and horizontal shaft types. Each model is engineered and built to absorb suddenly-applied peak loads without stalling, having output well in excess of its rated power. New, patented Contex external ignition system, either with or without Contex mechanical governor, is available exclusively on the models of this Continental line.
1. To customers buying and using Continental-powered refrigeration and air conditioning equipment, lawnmowers (conventional or rotary) garden tractors, pumps, compressors, sprayers and similar machines, it means long-continued usefulness, at lowest possible cost, with an absolute minimum of time out for repairs.
2. To manufacturers of equipment using Continental Red Seal air-cooled engines for power, it spells protection of their own products' good name, for it reflects Continental's deep and sincere concern with customer satisfaction.
3. To dealers selling such equipment, it identifies Continental-powered machinery as superior from the standpoint not only of initial quality, but of Continental's continuing interest after the sale.
Some good territory remains open. Write for information, using this coupon.
CONTINENTAL MOTORS CORP.,
Air-cooled Industrial Engine Div.,
12800 Kercheval Ave., Detroit 14, Mich.
Attention: Service Dept.
Gentlemen:
If you have sales and service territory open in_____ please send full information.
Name_____
Address_____
IT'S WISE FOR THE MANUFACTURER TO BUILD—THE DEALER TO STOCK —THE CUSTOMER TO CHOOSE—EQUIPMENT WITH RED SEAL POWER.
Continental Motors Corporation AIR-COOLED INDUSTRIAL ENGINE DIVISION
12800 KERCHEVAL AVENUE • DETROIT 14, MICHIGAN
CONTINENTAL MOTORS Powerful as the Nation AMERICA'S STANDARD

IS OLD MAN MOISTURE GIVING YOUR COMPRESSOR a Hot Foot
COMMERCIAL REFRIGERATOR
Without a complete vapor seal insulation will become wet and cease to function; your compressor will run overtime, get a (hot foot) and waste electricity.
Only McCALL offers steel sentry construction with which you get a complete vapor seal all-welded construction and non-sweating mullions.
Limited territories available to qualified firms.
Send this ad for information.
McCALL
REFRIGERATOR CORPORATION
Hudson, N. Y.

Standardizing Military Equipment--

(Concluded from preceding page)

with industry, maintained the integrity of the various companies, designs and, for the most part with the machine tooling available, made such changes in pistons and moving parts as to insure interchangeability among the various products of the different manufacturers.

PARTS STANDARDIZATION WILL EASE SUPPLY PROBLEMS

"The benefits are obvious. One service using several such auxiliary engines will no longer find it necessary to stock complete sets of replacement parts for each engine of a different manufacturer. If a standardized spare is lacking, it will be possible to draw one from any other branch of the military services in the area having a similar engine regardless of make. The overseas pipeline burden will be eased.

"Similarly, ground troops in action and using equipment powered by one of these standardized engines will be able to cannibalize similar engines from knocked out equipment to replace parts in equipment still usable. Units of one service will be able to draw from spare part stocks of neighboring elements of another service, or troops ashore will be able to obtain spare parts from supporting units afloat. Ships going off station to return to base can provide their stock of spares to other units.

STANDARDIZATION WILL CUT PRODUCTION REQUIREMENTS

"The standardizing of these parts, with its resultant reduction in spare part supply support at every echelon, will naturally reduce the number of spares manufactured, thus freeing plant capacity for other work, and, ultimately effecting conservation of critical materials, manpower, and money," declared Rear Admiral Fowler.

"Similar studies are now under way in the field of air conditioning and refrigerating equipment, and cranes and shovels, and it is intended to expand these studies greatly as time and availability of personnel permit.

"It is recognized that most manufacturers have found much grief in the field of government specifications. It is believed that after the Office of Standardization completes its detailed study in this field, many of the 20,000 specifications now being used by the military departments will be eliminated. Under the pressure of wartime needs, numbers of these purchase documents were developed by the individual technical services and bureaus without regard to the requirements or interest of other elements in the military. Therefore, many of these specifications contain conflicting requirements which only serve to confuse and irritate the producer faced with providing items purchased against them.

"Wherever it is revealed that more than one military department has an interest in a specification, all existing specifications will be screened to unify requirements and develop a coordinated document which shall be binding upon all purchasing officers buying the items covered. The specifications emerging from this process will be realistic, understandable, and effective. Finally, it is proposed to set up procedures whereby the specifications will be readily available to industry, thus providing a more satisfactory arrangement than has been existent. . . .

INSPECTIONS WILL BE STANDARDIZED

"In the past, each of the departments and, in many instances, each of the technical services and bureaus of the Navy, has conducted its own inspection in accordance with its own concept. In many instances, the methods and requirements of inspection vary widely and, even for similar items, industry has had to cope with these differences.

"With the full cooperation of the military departments, the Office of Standardization is now making an intensive study of the possibilities for: one, unifying inspection formats for similar items; and, two, consolidating inspection organizations and facilities to the maximum extent possible. Frequently, it will be possible for one of the services to do the entire inspection for all three departments for one particular commodity. . . .

POTENTIALITIES FOR SAVINGS IN PACKAGING

"In the field of packaging there are potentialities for savings not only in packaging costs, but through the assurance that delicate precision instruments, protected by adequately designed packages, will arrive at destination ready for use. Properly designed containers may be reused for returning items to central overhaul points for repair, providing an economy factor in reduction of loss. During World War II failure to properly protect items sent to the rear for repair resulted in excessive loss in transit. . . .

94 PART NUMBERS REDUCED TO ONLY ONE

"Cataloging research within the lower elements of the services have disclosed some inconsistencies, not only in service purchasing, but in numbering of parts by manufacturers. A piston, which is a 'part peculiar,' that is a part designed by a manufacturer for use exclusively on two of its refrigeration compressors, has 94 different part numbers assigned to it by the manufacturer. Cataloging research consolidated the 94 numbers to one which is now being used for purchase.

"In another instance, a bearing liner assembly, used by a company on a particular reduction gear, was sold by that company for $25 each when six were ordered in July, 1944. Cataloging research disclosed that another company used the same bearing liner assembly on one of its reduction gear models. The second company sold two of these bearing liners in June, 1944, for $63 each. It was further determined that 16 manufacturer's numbers applied to the same bearing liner assembly. The prime manufacturer was identified, adopted as the source of supply, and in February, 1945, 300 of these bearing liners were purchased at $9.06 each.

"A common screw used in a certain company's purifiers was called by the manufacturer by two numbers and sold for 5 and 10 cents each. Research proved that this screw was a standard stock item and could be procured in quantity at $.0072 apiece.

"It is easy to see that prior to cataloging costly confusion existed. The stocking of items, which were in fact identical, by manufacturer's numbers, could of itself cost excessively in multiple binning, additional storage space, extra personnel, involved stock control, and duplicative paper work. Before such stocks were consolidated through cataloging, it was possible that equipment be held idle waiting for a replacement part when, in fact, that identical part was readily available in stock, but in another bin. This situation cannot exist after thorough cataloging research, and the development and publication of adequate catalog data," explains Rear Admiral Fowler.

Returning to the specific problem of refrigeration, the standardization program is concentrated on the development of interchangeability of major components. The compressors are naturally of first priority for they require most maintenance. The open type compressor precedes the hermetic because it is used in the most remote areas. Electricity is seldom available and the prime mover is a gasoline engine.

All manufacturers of open type compressors have already received two requests for data on their equipment. One for certain physical dimensions of their compressors. (This information has been received and tabulated). The other for capacity data reduced to standards agreed upon by the three military departments. These latter data submissions have been promised for early April. The above combined data will be studied to determine if interchangeability can be attained with minor changes in design or tooling of the manufacturers.

HERMETIC COMPRESSOR IS NEXT TO BE STUDIED

The solution of this problem of refrigeration standardization depends upon the success of standardizing the compressors. The study of the open type compressor will be followed by the hermetic. The heat exchangers and accessories study will be made and finalized when the pattern of the compressor standardization is in sight.

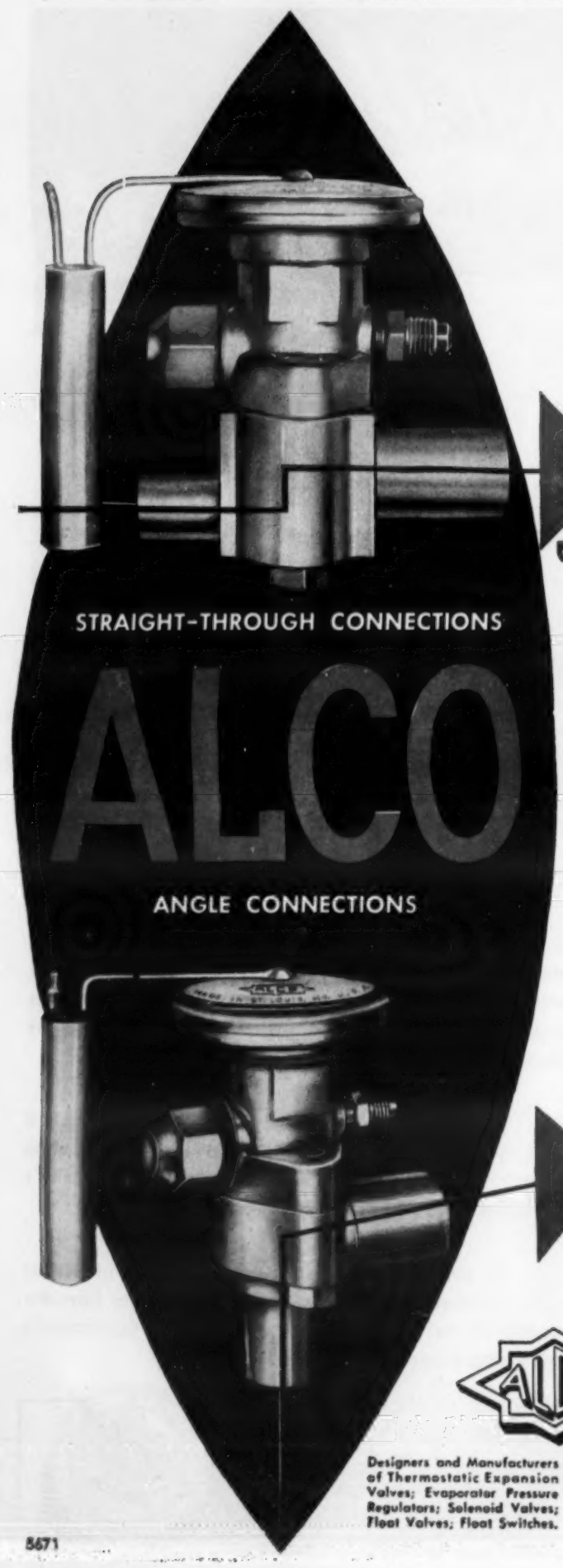
It is emphasized by DSMA spokesmen that "we aren't trying to establish any single compressor that will be standard. Rather DSMA wants to simplify the replacement problem, particularly in field equipment.

Just how far this standardization program can go is subject to considerable debate. Some favor only setting up standards on the physical dimensions. Others, however, want to consider standardization of replacement parts.

In addition, some believe the program should be limited to equipment used by the Department of Defense in battlefield installations, while others contend it should apply across the board to all such refrigeration and air conditioning regardless of where it's used.

These and many other questions confront the joint efforts of the military and industry in the standardization program.

Only time will bring the ultimate solution.



Save Installation Time!

"T" SERIES THERMO VALVES

available in 2 types:

- STRAIGHT-THROUGH CONNECTIONS
- ANGLE CONNECTIONS

Now you can choose the "T" Series Valve that best fits each job—any location.

inside...they're identical

Parts are interchangeable.

They're simple to service without removing the body from the line. To adjust superheat, just unscrew the seal cap and turn the stem.

Available for all temperature ranges—all operating conditions.

Write for further information today.

SEE YOUR ALCO WHOLESALER

ALCO VALVE CO.

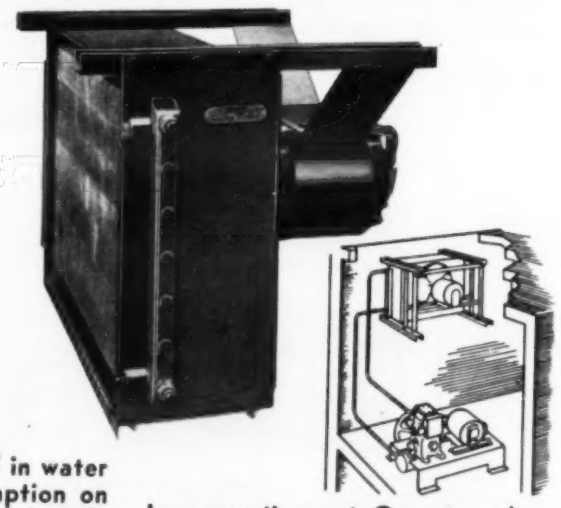
853 KINGSLAND AVE. • ST. LOUIS 5, MO.

Designers and Manufacturers of Thermostatic Expansion Valves; Evaporator Pressure Regulators; Solenoid Valves; Float Valves; Float Switches.

8671

Save Water with heat-x

AIR-AND-WATER COOLED COMBINATION CONDENSERS. FOR REMOTE INSTALLATION.



Quickly pays for itself in water saving. Water consumption on year 'round basis approximately 5% of water cooled condenser usage.

Flexible installation. Can be mounted in any location, indoors or outdoors.

Full water cooled capacity. Compressor can operate at full water cooled speed.

Request free descriptive bulletin.

Low operating cost. Operates only when compressor is running.

Low maintenance cost . . . no accessory equipment, no open water system, no chemical concentrations in water.

Cleanable water tubes.

No breakdown losses. Can operate on either air or water in emergency.

THE HEAT-X-CHANGER CO., Inc.

BREWSTER - NEW YORK

Rolling Showroom, Home Trials of Appliances Create Curiosity, Result In Increased Sales

MONTGOMERY, Ala.—Today, with competition hitting an all-time high in white goods merchandising, it is necessary to isolate those merchandising methods which are still infallible, and to base all appliance promotion upon them, according to C. H. Etheridge, manager of Rush Stallings Home & Appliance Co., here.

In selecting the media which has produced consistent results, Etheridge combined the use of mobile showrooms in the form of vans which permanently display all of the firm's major appliance lines, with an aggressive type of personal salesmanship.

CAN COVER LARGE AREA

"The rolling showroom has, for the most part, definitely proven itself, particularly where customers are spread out over large areas, and where suburban or semi-rural territory is concerned," Etheridge pointed out. "Both count heavily in our selling operations, and therefore, we have made the most of the rolling showroom system."

The firm does not "free lance" with its display vans. Instead, all salesmen are required to obtain prospect leads from as many sources as possible, including the previously-sold user, tips from Dodge reports, building reports, or any other source. Then the telephone is used as step No. 1 in mobile showroom selling.

"In exploring the possibilities of appliance sales, we telephone the prospect and invite her to visit the store," the Alabama appliance dealer said. "Naturally a lot of prospects do not rush to the showroom to look over the appliances. If this happens, however, we are not discouraged. Instead, the rolling showroom then swings into use as step No. 2 in our sales program."

KEEP 'SPARES' ON HAND

In following up, the rolling showroom is taken right to the prospect's door, with every appliance aboard which can conceivably interest her, and a number of "spares." These "spares" are immeasurably important in converting what would otherwise be merely an expensive means of demonstrating appliances into actual sales.

Most women are curious when the portable showroom is brought to the door. Moreover, most housewives will drop whatever they are doing, to give the salesman time to "show his wares." While every call may not develop a sale, it invariably produces enough valuable leads to pay costs, Etheridge points out—in the form of neighbors gathering around for the demonstration, noticing the truck, and coming over to ask questions.

The third step in Rush Stallings' program is to leave a "demonstration appliance" for a free trial period in the home. By having extra TV sets, automatic washers, refrigerators, electric ranges, etc., in the van, it is a simple matter to move an appliance directly into the customer's home to be used for whatever is deemed a fair trial period.

Here again, less than half of the prospects with whom the firm deals will actually permit such demonstrations. Where they do, however, closing the sale is usually a matter of a return telephone call, or personal visit by the salesman. It has been found that even though an appliance may not be purchased at the moment, the fact that it has been used in the home creates a desire which results in a sale later on.

BOTH SHOWROOMS KEEP ON THE MOVE

Both of the rolling showrooms are in continuous use. It is a complex process, Etheridge pointed out, but since it means better sales, he feels that it is well worth-while.

"We have compared results of ordinary door-to-door canvassing from time to time with those accomplished by means of the rolling showrooms," he said. "And in every case, it has been the latter method of selling which has paid dividends."

In keeping with aggressive selling, Etheridge has expanded what was a humorous idea into a powerful psychological asset in making additional appliance sales. On his office wall is a chart blocked off into city neighborhoods, to indicate the names and addresses of customers who have bought specific appliances. The chart is very informative, detailing the fact that a certain housewife has purchased a 17-in. screen television set, that another housewife is enjoying the benefits of an automatic washer and clothes dryer, etc.

Whenever a prospect is brought into the store, or comes in to shop, the chart is used as a psychological selling help. The salesman first determines in what neighborhood she lives, and then points out the names of other customers already sold in her area. The "keeping up with the Jones" element enters into the sales relations immediately.

Almost every woman wants a television set with a larger screen, a more complete automatic laundry, a larger refrigerator, etc., than her neighbor. In this way, passing along the information detailed by the chart invariably stimulates the customer to buy something better, and sales then enter the better-price brackets.

Wonderbar Gets Tie-In with Yankee Baseball Broadcasts

NEW YORK CITY—Servel's electric Wonderbar will be used by Mel Allen during his telecasts of the New York Yankees' 77 games in a tie-in promotion with his sponsor, Ballantine beer, it has been announced by Neal E. Schuman, sales manager of Servel's Wonderbar division.

Mel will reach into the Wonderbar and take out a bottle of cold beer each time he gives the Ballantine commercial.

The Wonderbar is Servel's portable refrigerette styled like furniture.

Zdanowicz Named Sales Mgr.

UTICA, N. Y.—Rudolph F. Zdanowicz has been appointed sales manager at Jayson's Appliance Inc., 214 Columbia. He has been in the appliance field for many years and formerly was associated with the Boston Store and H. D. Morehouse & Son.

Norge Repeats Automatic Washer Guarantee Promotion

CHICAGO—Repeating last year's successful promotion, Norge will again feature an unconditional guarantee plus a clothes carrier and 50 lbs. of "All" detergent with sales of its "Time-Line" automatic washer (AW-450) in a two-month period beginning May 1.

H. L. "Red" Clary, vice president in charge of sales, said the guarantee will offer a full purchase price refund if the buyer isn't completely satisfied with the automatic washer after using it 30 days at home in her own way.

Even if the washer is returned, the buyer still keeps the clothes carrier and detergent given free of cost with each automatic washer sale.

Clary said newspaper ads and window streamers announcing the promotion are now being distributed for dealer use.

Jerry Lewis Helps George's Kick Off Refrigerator Sale

TORONTO, Ont., Can.—The popular comedian Jerry Lewis provided an unusual promotional hook for George's Appliances here in a recent refrigerator sale.

A Lewis movie was being shown in a local theater and George's tied in with a large newspaper ad of Jerry in a frowning pose, caption reading: "Of course I'm mad. Dean won't let me go to George's refrigerator sale."

Another picture opposite a cut of a Norge refrigerator offered at $199 shows slap-happy Jerry shouting, "I like it, I like it!"

Distributors Host to Texans At Barbecue May 29

HOUSTON, Texas — Following the Texas Appliance & Television Dealer Clinic at the Shamrock Hotel here May 29, local distributors are co-sponsoring a barbecue for the 2,000 dealers expected.

Firms who will serve as host to the dealers are J. A. Walsh & Co.; Cox & Blackburn; Covington Distributing Co.; Nash-Kelvinator Corp.; Edwin Flato Co.; Automatic Distributing Co.; Tappan Stove Co.; Crumpaker Distributing Co.; Straus-Frank Co.; G-E Supply Co.; and Westinghouse Electric Supply Co.

Announcement of the affair was made by Stanley Blount, president of the Houston Appliance Dealers Association, who will be host to the state conclave of dealers on May 29.

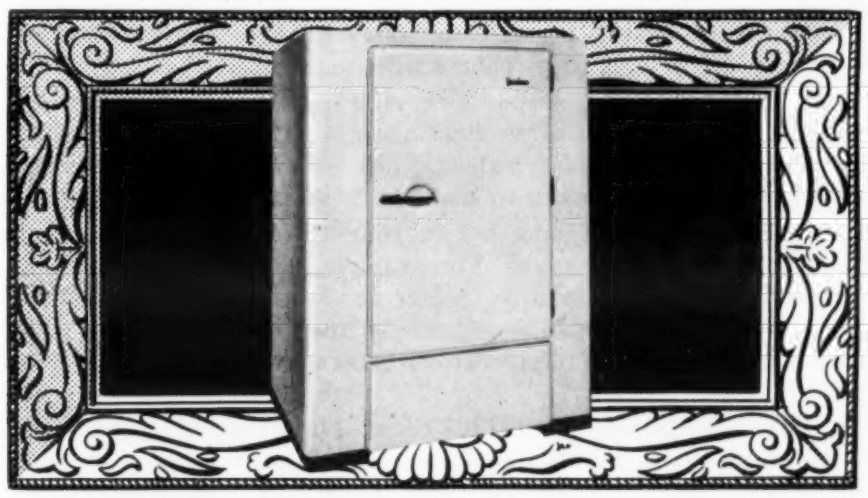
Balloons over Jamestown Lure Public to Bill's Store

JAMESTOWN, N. Y.—Bill's Radio & TV Sales & Service here staged a balloon dropping promotion on a recent Saturday afternoon.

At 2 p.m., a chartered airplane let go about 1,000 balloons over the Jamestown area, each one containing a coupon, entitling the retriever to prizes and merchandise certificates. Each adult was permitted to bring in only one balloon.

Six electric fryers were awarded to lucky retrievers. Merchandise certificates ranged in value from $25 to $100 on the purchase of a range, refrigerator, freezer, or television set.

Bill's Radio & TV launched the promotion with newspaper advertising on Friday.



Are YOU in this
JORDON
Profit Picture?

NEW! "STORE-MORE" Upright Food Freezer—Model CF-30. Ideal any place where large capacity and economy are required!

Here's *another* good reason why *you* should be in the Jordon profit picture, with the biggest and best line in Jordon history!

Write, Wire or Phone *Today* for Free Catalogue and Price List!

JORDON REFRIGERATOR COMPANY
58th and Grays Ave. • Philadelphia 43, Pa. • BELgrade 6-4510
Display Cases • Wall Cases • Reach-in Refrigerators • Beverage Coolers • Freezers • Air Conditioners • Dehumidifiers

IF IT'S JORDON, IT'S RELIABLE REFRIGERATION

Make easier sales, bigger profits—
SELL KELVINATOR with the "Polarsphere!"

RHONDA FLEMING enjoys a drink from the Kelvinator during the shooting of "PONY EXPRESS" A Paramount Picture
COLOR BY TECHNICOLOR

Whether he's buying for store, office, or factory, your water cooler prospect *knows* about Kelvinator. He knows he can depend on the Polarsphere, Kelvinator's famous hermetically sealed power unit. For Kelvinator has been a familiar, trusted name in electric refrigeration for 39 years!

And with Kelvinator, you have *more* than a trusted name to sell—you have the Pre-Cooler that almost doubles the cooling capacity . . . the spurtless, feather-touch dial . . . 5-year warranty . . . a complete line of hand or foot operated models, either bottle or pressure type.

Advertising in these great magazines!

NEWSWEEK . . . U. S. NEWS . . . BUSINESS WEEK—the favorite magazines of your best water cooler prospects! That's where Kelvinator's great "movie star" advertising campaign is running—a campaign that's sure to mean extra water cooler business for Kelvinator dealers!

Get Started Selling Kelvinator!

Just call your local Kelvinator Distributor. (He's listed in your local phone book.) Or write Kelvinator Water Coolers, 108 Lucas Street, Columbus 8, Ohio, for complete Dealer Information.

THERE IS A BETTER WATER COOLER...
IT'S Kelvinator
Oldest Maker of Electrical Refrigeration for the Home
THE MOST VALUABLE FRANCHISE IN THE APPLIANCE INDUSTRY

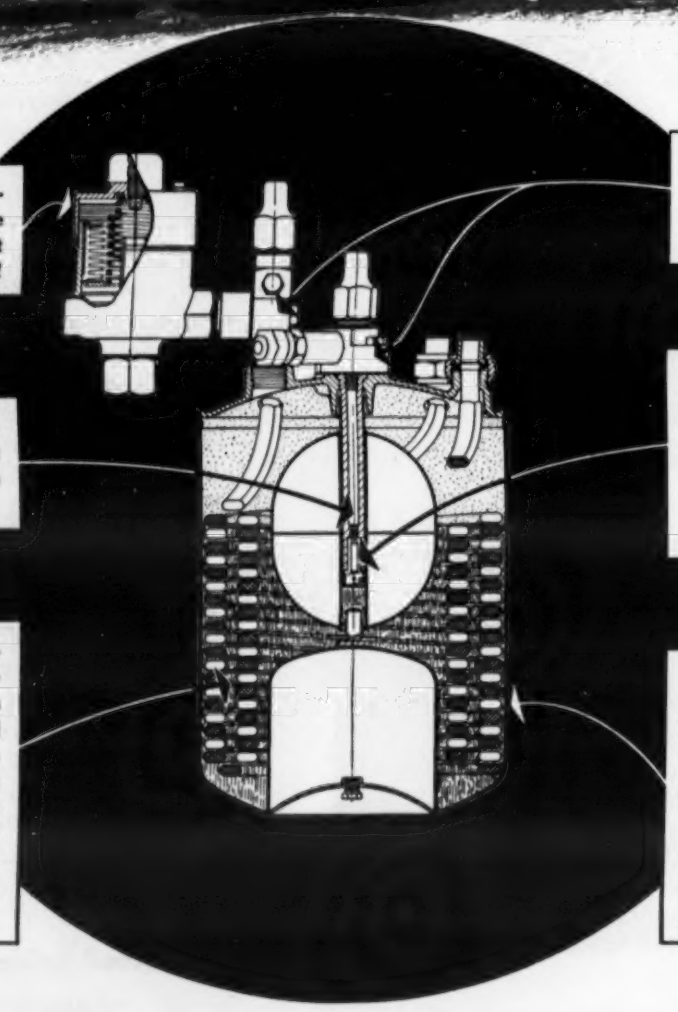
They'll Do It Every Time . . . . By Jimmy Hatlo

HENRY, OL' BOY... I GOT TO HAND IT TO YOU, THE WAY YOU TOLD OFF THE BOSS AT THE OFFICE DANCE LAST FRIDAY NIGHT...YOU WERE REALLY IN GREAT FORM...AND WHEN YOU PUSHED HIM UP AGAINST THE WALL I THOUGHT YOU WERE REALLY GONNA LET HIM HAVE IT....
HENRY JUST WENT TO SLEEP AT THE TABLE, BUT RIBBER HAS HIM BELIEVING HE HUNG A FEW LEFT HOOKS ON BIGDOME...
ME? I DID THAT? I...UH...DON'T REMEMBER..ER.. MUCH THAT..ER.. WENT ON...I... UH.. WASN'T..ER.. FEELING GOOD..
TOO BAD IT'S NOT TRUE... SOMEBODY OUGHT TO CREASE BIGDOME'S CRULLER..
HENRY'LL PROBABLY GO IN AND APOLOGIZE..HA-HA...AND BIGDOME DOESN'T REMEMBER ANYTHING, EITHER.. WOW!!
WAIT'LL THIS STORY GETS AROUND..RIBBER HIMSELF WILL BELIEVE IT...
HENRY WILL WORRY ALL YEAR TILL THE RETURN MATCH AT THE NEXT OFFICE BRAWL..
MORE ULCERS FOR THE OFFICE WORRY-WART....
THANX AND A TIP OF THE HATLO HAT TO DICK DU BOIS, 72 S. CENTER ST., S. ORANGE, N.Y.
JIMMY HATLO
3-24
COPR. 1953, KING FEATURES SYNDICATE, Inc., WORLD RIGHTS RESERVED.

Have You READ *'Peace and Progress'* Yet?

DECIDE FOR YOURSELF!

...Compare TEMPRITE with ANY OTHER liquid Cooler



EVERY TEMPRITE is supplied with an infinite pressure control valve. Assures perfect exit temperature... ALWAYS!

EVERY TEMPRITE is supplied with a liquid control float valve. No additional controls required.

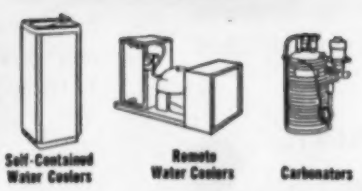
EXTREMELY HIGH CAPACITY through exclusive patented principle! Cooling coils directly submerged in liquid refrigerant and heat transfer is instantaneous through a single wall only! (All coolers rated at 40° exit temperature, but lower or higher temperatures are available . . . without the addition of extra equipment.)

EVERY TEMPRITE is supplied with liquid and suction line shut-off valves, simplifying installation.

LOW-SIDE FLOAT CONTROL assures instantaneous reaction to load, and positive closing on off cycle . . . thus guaranteeing refrigerant flow proportionate to load requirement.

INSTANTLY COOLS water, carbonated drinks, beer, etc., etc. (Copper or stainless steel coils to suit.) Install at roadside stands, drive-ins, taverns, restaurants, fountains, amusement parks, etc. Widely used for industrial and commercial purposes such as photographic and process cooling, etc.

Since 1929 Temprite PRODUCTS CORPORATION BIRMINGHAM, MICHIGAN



TEMPRITE PRODUCTS CORP. "Be right with Temprite"
P.O. Box 72-A, East Maple Rd.
Birmingham, Michigan
☐ Send me data on Temprite Instantaneous Coolers
☐ Ask your representative to call.
Name_____
Address_____ Zone_____
City_____ State_____

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark registered U. S. Patent Office; Est. 1926

AIR CONDITIONING AND REFRIGERATION News

Copyright 1953, Business News Publishing Co.

F. M. COCKRELL, *Founder*

Published Every Monday by BUSINESS NEWS PUBLISHING CO.
450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924.
New York office: 521 Fifth Ave., Telephone Murray Hill 7-7158.
Chicago office: 134 S. LaSalle St., Telephone Franklin 2-8093.

Subscription Rates: U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: $5.00 per year; 2 years $8.00. All other foreign countries: $7.00 per year. Single copy price, 50 cents. Ten or more copies, 30 cents each; 50 or more copies, 20 cents each. Please send remittance with order.

GEORGE F. TAUBENECK
Editor and Publisher

PHIL B. REDEKER, *Editorial Director*

C. DALE MERICLE, *Associate Editor*

JOHN SWEET, *Assistant Editor*
HUGH MAHAR, *Assistant Editor*
GEORGE HANNING, *Assistant Editor*
MARGARET DEAN, *Assistant Editor*
Editorial Assistants: PAT O'CONNOR, JOY SLAUGHTER, AND LENORE E. SMITH

E. L. HENDERSON, *General Manager*
ROBERT M. PRICE, *Adv. Mgr.*
ALLEN SCHILDHAMMER, *Western Adv. Mgr.*
ALICE M. BARROW, *Adv. Secy.*
WALTER J. SCHULER, *Production Mgr.*
LLOYD SILER, *Circulation Manager*
CECILIA COSTYN, *Subscription Mgr.*

Member, Audit Bureau of Circulations. Member, Associated Business Papers.

VOLUME 69, NO. 2, SERIAL NO. 1,260, MAY 11, 1953

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

Why Didn't We Do This Sooner?

FROM NOW ON retail inventories in our field shouldn't be so burdensome or spasmodic. Manufacturers have a new system for keeping them within bounds.

OBJECTIVE: neither overproduction by the factory, nor frantic inventory dumping on the retail level. Praiseworthy? You bet. Dealers will give three cheers!

METHOD: Warning systems based on postcards buyers are supposed to return when they purchase a refrigerator, freezer, etc., to receive their purchaser guarantee contracts.

The very act of mailing warranty cards to headquarters establishes the purchaser's right to free replacement of any part that proves defective within a specified period. And, by counting and tabulating those cards as fast as they arrive, manufacturing executives can gauge what's happening to retail markets in various regions. Thus they can spot trends in time to adjust.

Formerly, the good or bad news didn't filter back to the home office until it was too late to do much about it.

Bill Blees, canny Crosley top executive confirms:

"There can be inventory trouble in the last half of this year unless all manufacturers hold production strictly in line with retail demand. The best insurance against clogging of a distribution system is a method of planning future production that relies on accurate factual information."

For many years the Philco executive staff has received weekly inventory reports from branch managers and distributors—reports which were the envy of others in the business until this "consumer report card" idea came along. And, in regular Monday meetings, these inventory reports were assayed and projected.

"We spent an entire year," explains a G-E executive, "checking the number of cards received against our sales and those of our distributors and key dealers. Then we devoted another year to field-testing the results to make sure there were no bugs."

As a result, G-E now knows that 25% to 60% of buyers return their warranty cards. For example, 60% of the buyers of the combination refrigerator-freezer send in their cards. Hence, if it receives 480 cards in a week, G-E can feel reasonably sure that 800 combination refrigerator-freezers were sold during that period.

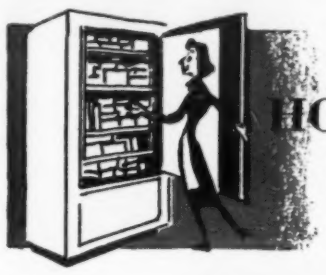
As the incoming cards are counted and sorted, the record of their volume is plotted on charts in graph form. There's a chart for every product and one for every model, say, of a refrigerator. Each chart also shows the latest industry sales trend for that model, along with last year's sales both for the company and the industry. Separate charts give the latest monthly sales of distributors. Thus, management knows what's happening to its own sales, and also gets a pretty good idea of what's going on in the rest of the industry.

Naturally, the warranty card system must be supplemented with "on the spot" information. Crosley, for instance, gets from its distributors a semi-monthly record of sales and inventories, and a monthly report from distributors and dealers covering sales and stocks. In addition, Crosley distributors mail 75-day forecasts of their anticipated sales to dealers.

Aided by such retail movement data, manufacturers can "police" inventories of distributors and dealers.

"For the first time," states the G-E spokesman, "we're in a position to tell distributors how much inventory they should have —and we intend to watch their stocks more closely than ever."

All this adds up to more PROFITS—and less losses—for everyone in our industry.



HOME & FARM FREEZERS

Freezer Demonstrations

Emphasize Convenience Factors But Don't Give Packaging Demonstrations, Says Home Economist

CHICAGO—"It is doubtful if a packaging demonstration ever sold a food freezer."

This point was made by Karen Fladoes, director of the Kelvinator Kitchen, at the home service conference held during the recent annual sales conference of Edison Electric Institute.

Discussing freezer and range demonstration ideas, Miss Fladoes said the results of a recent survey among homemakers already owning freezers "quite clearly points the way for freezer demonstrations.

"Homemakers were asked to select from a list of advantages which in their opinion made the most outstanding contribution to better homemaking. Was it better meal planning, less frequent marketing, time and energy saving, money saving, easier entertaining, or convenience?

"The first choice of the majority was convenience. Convenience is sort of an umbrella word covering all the other advantages. After all, convenient means 'handy,' 'easy,' 'labor saving.'

"Shouldn't we take our cue, then, from the homemakers who have experienced the convenience of using a freezer in daily food preparation and plan freezer and range demonstrations that really sell convenience?

"To understand and appreciate the full value of a home food freezer, women need to be shown how to live out of a freezer; how a well-stocked freezer makes meal planning easier; how money can be saved through quantity buying or special sales or saving of garden surplus; or leftovers being saved and utilized—we Americans haven't the remotest idea what food waste costs us; how the work of food preparation can be equalized.

"When you take the range into partnership with the freezer all the advantages come alive through the demonstration."

The same result cannot be accomplished by a packaging demonstration, Miss Fladoes said.

"Not for one minute do I want to minimize the importance of proper packaging for frozen storage, but it is doubtful if a packaging demonstration ever sold a food freezer," she told the Institute members.

"You will agree with me, I think, that the reason we placed so much emphasis on packaging to begin with was the fear that poor packaging would result in dissatisfaction with the freezer. Good packaging is essential to high quality of processed food and satisfaction from the freezer. And it is important that homemakers understand this.

"But, proper packaging can be shown by *unwrapping* preparatory to cooking. It's easier, it won't discourage the prospect, and often can be used to prove a point about packaging.

"For instance, if some chops are unwrapped to be broiled in the demonstration, show how easily they come apart when separated by two thicknesses of moisture-vapor-proof material. There is no need to wait for them to thaw before separating them and cooking can start immediately.

"The only time a packaging demonstration might be profitable would be in showing a group of women how much easier it is to put garden and orchard surplus into a freezer than to preserve it by canning. A display of packaging materials could be incidental to the demonstration or a variety of materials could be used in packaging foods to be cooked.

"Speaking of orchard surplus, something new has been added which you might be interested in including in freezer demonstrations. It's a new method for making fruit jams without cooking. They are preserved by freezing. The method was developed by Purdue university and Dr. Gertrude Sunderlin reports it in the April issue of our *Kitchen Reporter*.

"For another cue to demonstration subject matter, we can again go back to freezer owners. Among the most wanted information on the part of homemakers who already own freezers is information on freezing baked and cooked foods; its storage life and preparation for the table."

Miss Fladoes then introduced Kelvinator's most recent film, "Just Like Magic." The theme is electricity in the home with the accent on the "real magic" of electric cooking. The film is available on loan or purchase.

THIS CROSLEY UPRIGHT FREEZER is claimed to be the first on the market with five fully recessed shelves in the door. Suggested retail price, according to Crosley Div., is $469.95.

Everfrost Launches Direct To Dealer Sales Policy

GARDENA, Calif. — Everfrost Sales, Inc. is by-passing distributors, as such, and giving independent dealers the benefit of direct factory distributor prices on its new upright food freezer and ice cream storage cabinet.

Ben-Hur Appoints Mitchell

MILWAUKEE—R. C. Graves, Ben-Hur Mfg. Co. sales manager, has announced the appointment of Thomas E. Mitchell, as manager of Ben-Hur's southern sales district with headquarters at Memphis.

Mitchell will direct sales of Ben-Hur freezers in western Tennessee, Arkansas, Mississippi, Louisiana, and northeastern Texas.

'Largest' Network Airs Amana TV Program

AMANA, Iowa — The nationwide NBC television network that carries the Amana Freezer show on the Kate Smith Hour every Thursday from 4:15 to 4:30 p.m. EST is believed to be the largest ever assembled to carry a regularly scheduled and sponsored TV program, it was reported here recently.

George C. Foerstner, executive vice president of Amana Refrigeration, said that 82 stations carry his firm's program, 67 of them live and 15 by kinescope.

Several more stations will be added in the future.

Foerstner reported receipt of a wire from Frank White, president of NBC, congratulating Amana on its "largest station line-up" and "on the progressive thinking which has led Amana to keep pace with the growth of the medium and to thereby win for itself a dominant selling position."

NBC has reported that the Amana segment of the Kate Smith Hour is carried by the largest TV network, daytime or night time, Foerstner said.

"The program gets as close to maximum TV coverage as has ever been achieved, with 98% of the nation's television homes able to see and hear the program," he pointed out.

Foerstner also pointed out that this is the first network TV program to be devoted exclusively to promotion of food freezers.

Maury, Lee and Marshall, of New York City, is the advertising agency handling the program.

. . . IT'S THE REVCO
CHILL CHEST FOOD FREEZER

• *You know you sell the very best freezer when it's built by Revco!*

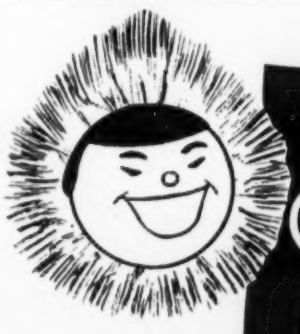
Faster Freezing

NEW LOW TEMPERATURE REFRIGERATION SYSTEM
NO FAN NOISE..NO CONDENSER CLEANING

Write For Distributor's Name

REVCO, INC. · DEERFIELD, MICH.

ESCO-MO SAYS . . .



GET MORE "COLD PROFITS" WITH
ESCO ICY-WALL® MILK COOLERS

Model "IW" ICY-WALL® Front-Opener

No other like it! "Jet" cooled in record time. Glistening walls of ice.

Model "AD" "NI-AG-RA" ICY-WALL®

Water level stays neck-high all the time.

Model "VD" ICY-WALL®

Economy model. High in efficiency, low in price.

3 Complete lines!

for every need—every budget

No wonder you get bigger profits, faster turnover, greater volume with Esco! There's a model to suit the needs of every prospect on your list. And *every* Esco features the famous Icy-Wall super-cooling system . . . a triumph of 25 years' research! For details and prices, write us today.

SELL THESE EXCLUSIVE FEATURES

- Glistening Walls of Ice.
- Strict Temperature Control.
- Super-Smooth Inside Walls and Bottom.

ESCO CABINET COMPANY
West Chester, Pennsylvania

"JOB TAILORED" means money saved

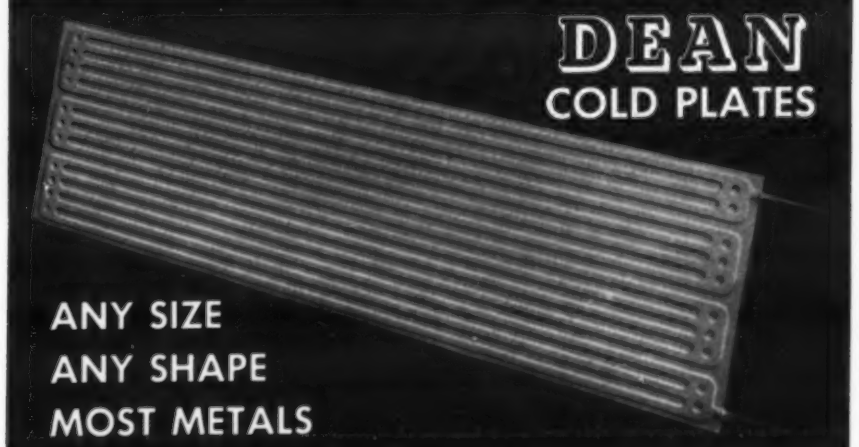
• Your cold plate dollar goes further when you specify DEAN because you eliminate waste! You get a plate in the *exact* size you need . . . not one that is almost right, but a plate that accurately meets your specifications. You name the size—you name the shape . . . we make it!

You can have plates in zinc metalized steel, stainless steel and in other metals. You can get cylinders, U's, angles, tanks, etc., and also plates for baudelot-type coolers.

Using DEAN "job tailored" cold plates means dollars in your pocket on every job. Try them!

SEND FOR TECHNICAL DATA BOOK

Get the details on DEAN Cold Plates for ice cream cabinets, locker plants, soda fountains, farm milk coolers, farm freeze cabinets, low temperature test rooms, frosted food refrigerators, window displays, food counters, refrigerated transportation and subzero applications for industrial chilling.



DEAN COLD PLATES

ANY SIZE
ANY SHAPE
MOST METALS

DEAN PRODUCTS, INCORPORATED
1042 DEAN ST., BROOKLYN 16, N. Y.
STerling 9-5400

CHRYSLER AIRTEMP

Sixteen years ago last March, Chrysler Airtemp shipped the first "Packaged" Air Conditioners ever produced, from its assembly lines in Dayton, Ohio.

The compressors used in those "Packaged" Air Conditioners were different. They were radial compressors...had an unusual valve design...and operated at 1750 rpm. Many people shook their heads.

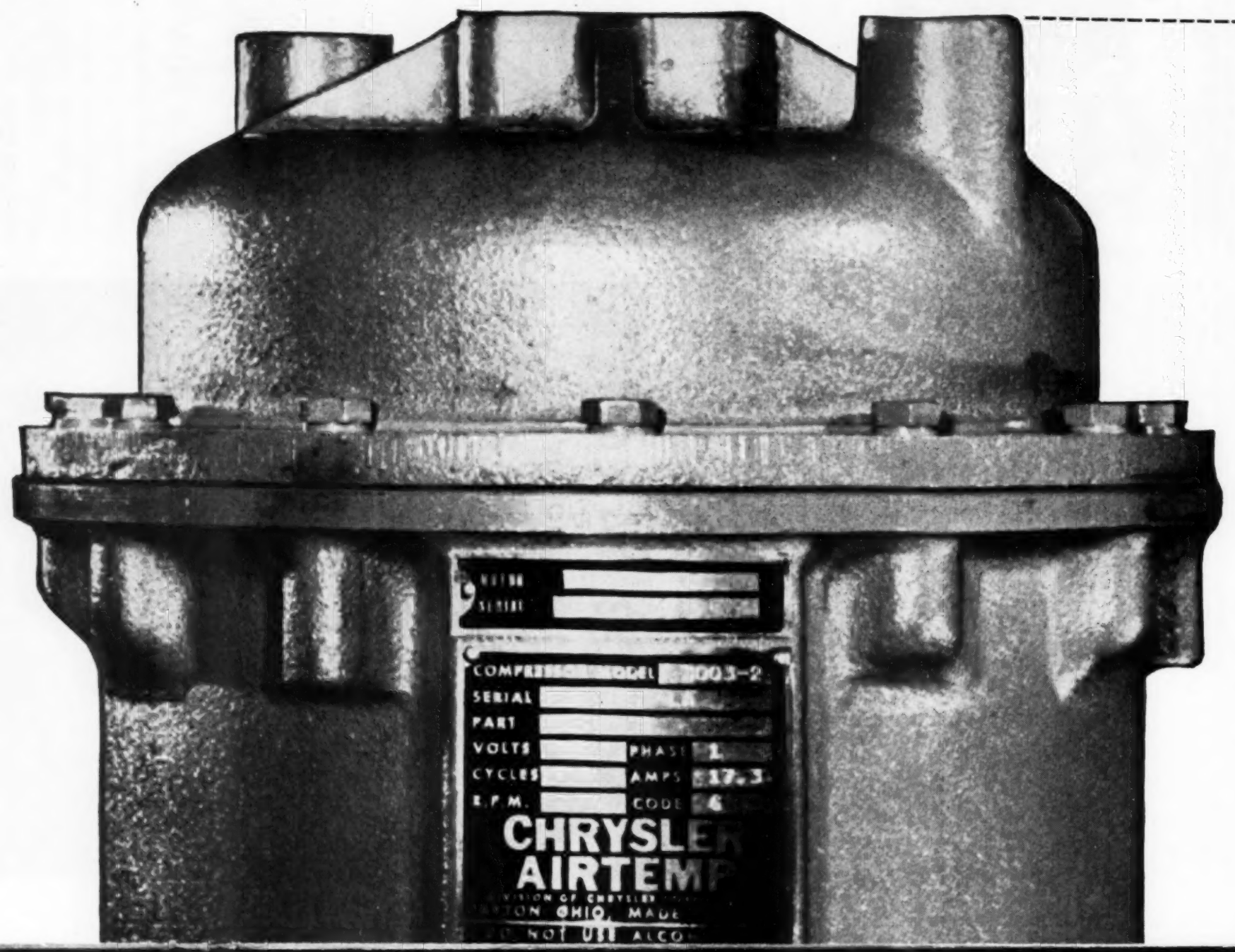
But—the proof of the pudding is in the eating! And the sixteen-year record of these radial compressors is good. So good, in fact, that Chrysler Airtemp sells more "Packaged" Air Conditioners than anyone else.

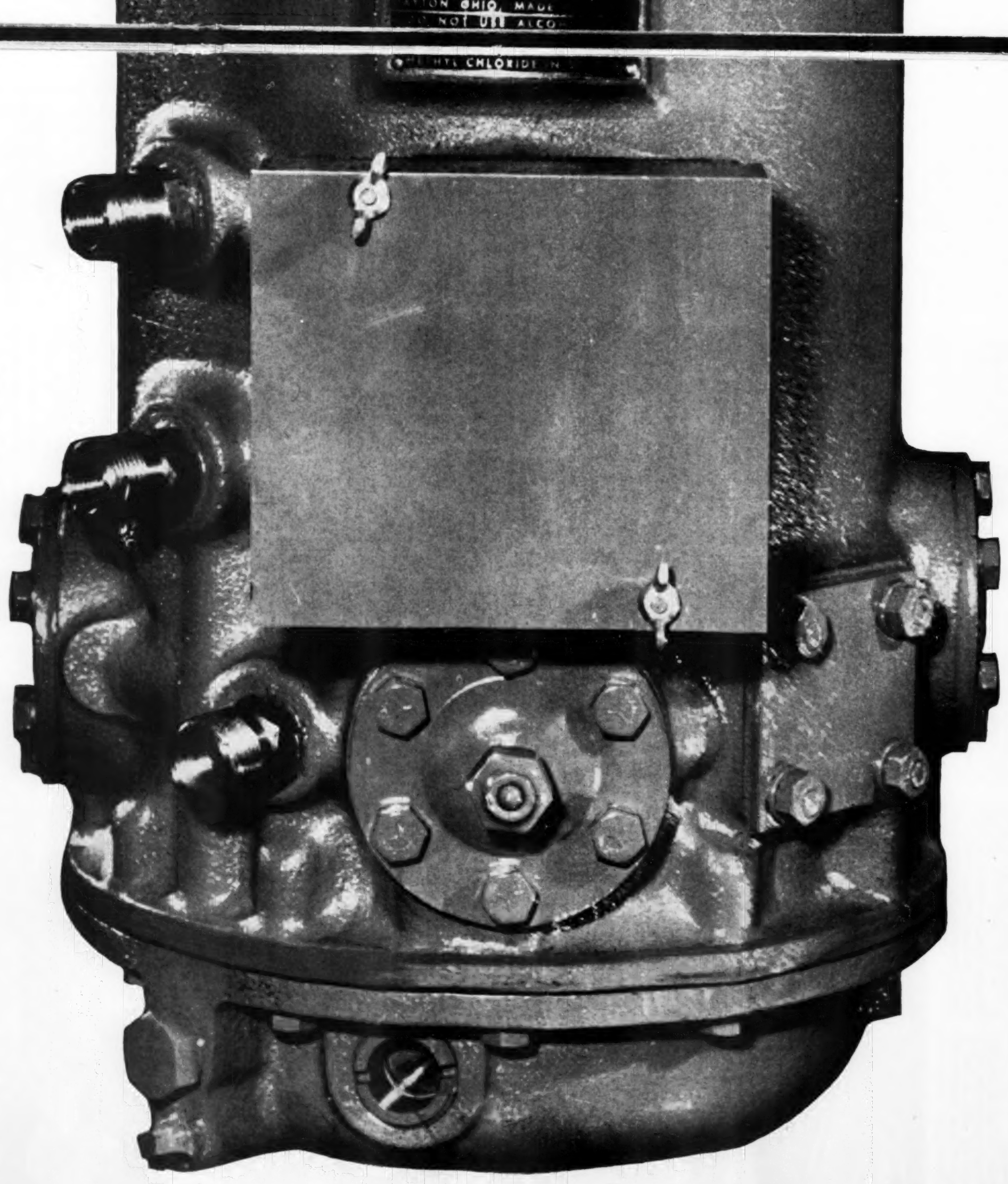
Here Chrysler Airtemp proudly presents—actual size—a new lightweight compressor. It operates at 3500 rpm. Combined in this compressor are 16 years of field experience from all over the world plus years of research and engineering.

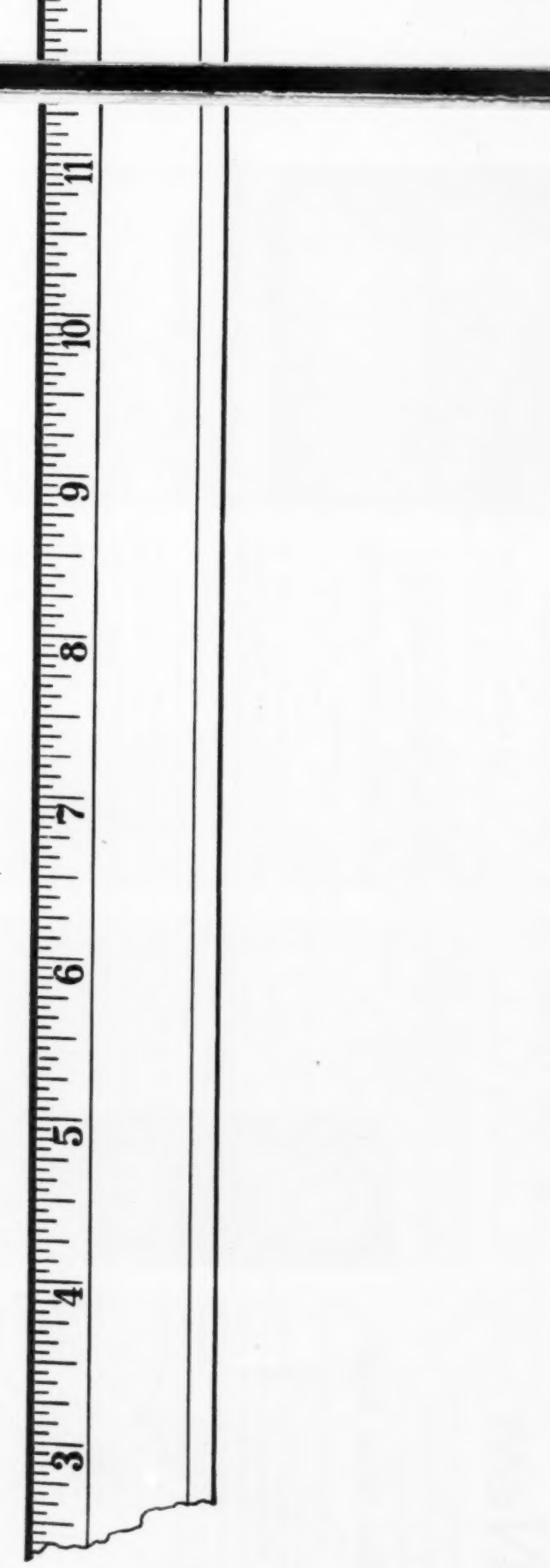
Every one of these compressors is warranted for 5 years.

And of course, these new compressors will be built in our windowless Air Conditioned factory, where it's never warmer than 78° F. or colder than 75° F. day in and day out. We take good care of our compressors so that they will take good care of our customers, our dealers and ourselves.

This new compressor is just *one* of the reasons why Chrysler Airtemp expects to retain leadership in "Packaged" Air Conditioners for homes, business and industry. If YOU would like to join the Chrysler Airtemp family, mail the coupon today. Get the facts.







Airtemp Division, Chrysler Corporation
P. O. Box 1037, Dayton 1, Ohio

AC&RN-5-53

Please send full details on the Chrysler Airtemp Comfort Zone "Packaged" Air Conditioning proposition.

Name_____

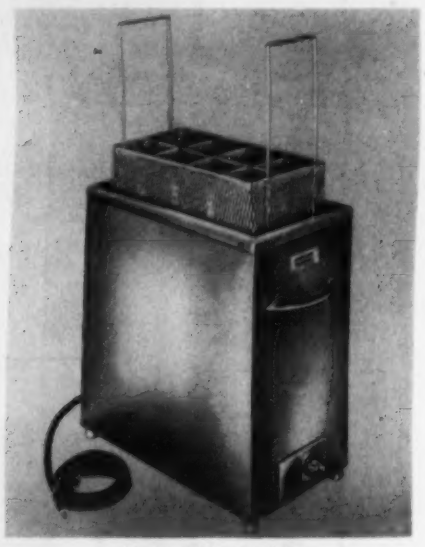
Address_____ Phone_____

City_____ Zone_____ State_____

What's New

When requesting further information on new products, please use "Information Center" form.

Mallow Dip Tank Washes, Sterilizes Silver Rapidly



——KEY NO. C-520——

CHICAGO—A new silverware dip tank, which reduces labor costs and laundry expense while insuring complete sterilization in a matter of seconds, has been developed and put on the market by Mallow Products, Inc., it was announced by Irving Schwartz, treasurer.

An important feature of the new tank, the Chicago food service equipment manufacturer said, is that it enables any restaurant economically to meet health department requirements in silverware sanitation.

The new Mallow tank, Schwartz said, is of stainless steel, double wall construction. It contains an eight-compartment wire basket by means of which the silverware is immersed in the sterilizing solution. A 750-watt immersion type heater maintains water temperature at 195° F.

Rinsed silverware is placed upright in the basket compartments and is then submerged in 5 gal. of heated water to which a cleansing compound has been added. The silver, washed, sterilized, may be removed from the tank in a matter of seconds, dry and ready for immediate service.

Schwartz explained that this method eliminates the necessity of hand-toweling and therefore saves laundry expense, time, and labor costs.

The tank's double wall construction provides a sealed-in air space which inhibits the transfer of heat to the outer shell which always remains cool. The tank is portable and is provided with a chrome-plated handle at each end, and rests on four legs of non-conducting plastic.

It operates on 115 volts, 60 cycles, a.c. A light switch with red signal indicates when the current is on. The unit is equipped with a shock-proof, heavily insulated, 7-ft. extension cord.

Can 'Tune' Carbonation In Cup Drink Dispenser

——KEY NO. C-521——

CHICAGO—A new cup drink dispenser that has a 1,200-cup capacity and features a new type of carbonation delivery was announced recently by the Cole Products Corp. here.

Called the "Magniflo 1200," the unit is enclosed in a cabinet no larger than that of the 600-drink unit, the firm says. This is the result of new developments in Cole's hermetic unit, which is much smaller and more efficient than previously.

The new method of delivering carbonation results in much higher Co_2 volume in the cup than was ever before possible, the manufacturer claims. He says that with the new adjustable "Duotonic" tap, operators can "tune" carbonation in excess of four volumes, if desired.

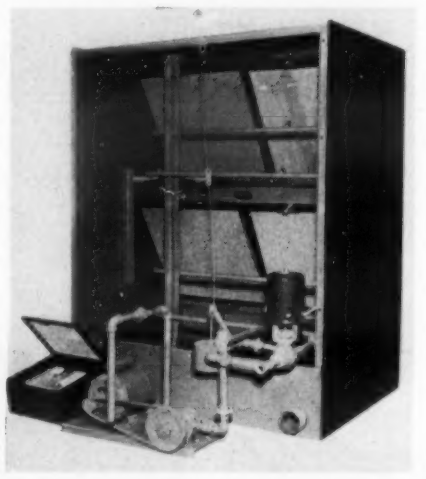
The tap is said to produce a high, stable "head" without beating or activating, so that drinks stay "live" up to three times as long as previously.

Because of the greatly increased capacity of the machine, the Cole hermetic has been redesigned and now features a new system of refrigeration that makes warm-up impossible, even after the longest run. Called "Microthermic" refrigeration, the system features instantaneous recovery of cold water the instant a drink is served. The system also prevents freeze-up.

Only additional information on the refrigeration system released by the company is that it keeps a reservoir of cold water at the required temperature and has a recovery rate that is so tremendous that water is cooled down virtually instantaneously.

The Cole-Spa Magniflo 1200 is built on an all steel welded chassis with built-in casters. It has stainless steel fittings and a new simplified electronic system that is claimed to eliminate electronic breakdowns.

A special model for theater lobbies features a white lucite panel on the front with a "thirst" scene in four colors and a selling message. The lucite panel lights up from behind and directs a beam of light down across the front of the dispensing machine.



Improvements Added to Farr Self-Washing Filters

——KEY NO. C-522——

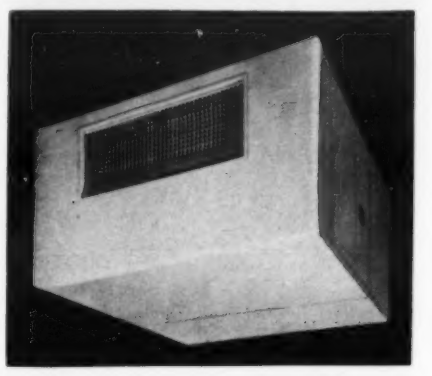
LOS ANGELES — Two improvements added to the "Far-Air" self-washing filter are test buttons which enable operation of the washing and re-oiling mechanism without disturbing the automatic cleaning cycle, and a unit to drain all water lines automatically as a protection against freezing, according to J. D. McCampbell, sales manager.

The new drain unit is spring actuated, positive in action, and requires an operating pressure of only 20-25 lbs., McCampbell said.

Far-Air self-washing filters are equipped with corrosion-resistant 20 in. by 20 in. by 4 in. units installed at a 30° angle toward the air flow. A series of automatically controlled water and oil jets on the entering air side periodically wash and re-oil the filter units to maintain maximum filtering efficiency.

Safety measures include a "deluge" valve which minimizes the possibility of fire passing through the unit. A cable incorporating a fusible link holds the valve closed. This fusible link parts at a temperature of 160° F. and releases a weighted handle, opening the valve and resulting in continuous streams of water being directed to the filter units. All excess oil is immediately flushed directly down the drain.

These filters are available in capacities to handle any c.f.m. requirement. They are shipped complete with all parts ready to be put into operation.



4 New Kramer Models Are All Ceiling Mounted

——KEY NO. C-523——

TRENTON, N. J. — New Kramer air conditioning units available in four models with 3 to 10 tonnages and incorporating new features have been announced by Kramer Trenton Co. here.

The units can be furnished with direct expansion coils, water or steam coils, and humidifier.

Ceiling-mounted, the new models reportedly feature "muggy-air-control," "blow-through" design, anti-sweat construction, and quiet operation. They are finished in a gray hammer enamel and designed to be suitable for the finest finished interiors. They can be used in a finished interior or remote with or without ducting.

"The muggy-air-control 'squeezes' extra moisture from the air on muggy days without excessive cooling," the company explained.

"The cooling coils have two independent refrigerant circuits, one above the other. A solenoid valve can cut out the upper circuit on high humidity, which sharply reduces the refrigerant temperature and increases the dehumidifying effect. The muggy-air-control can be operated manually or automatically by use of a humidistat.

"The blow-through design is naturally an 'anti-sweat' design, says Kramer, since only a small portion of the casing is exposed to the colder air leaving the coil. Heavy insulation of that coil section eliminates sweating on the casing exterior.

Access doors and discharge grille are of scientific anti-sweat design and the insulated drain pan is pitched for quick drainage of condensate, which further prevents sweating.

"This unique Kramer blow-through development places the fan-motor assembly in the air intake, exposing it at all times to normal room temperature. There is no motor overload and no loss of bearing lubricant from the hot air of the heating coils.

"Likewise, there is no corrosion of the fan assembly from moisture carry-over of the cooling coils. Even air distribution through the coils is assured."

The fans and motor form an integrated assembly and are rubber-mounted independently to the casing. All moving parts are inside the casing and completely encased in rubber.

The units "permit the remote location of the compressor, eliminating all compressor noises from the conditioned area," Kramer Trenton said.

Now GLOEKLER Offers A Complete Line of Refrigeration Equipment for Every Need
No matter what the need for mechanical refrigeration, a Gloekler unit will do the job with maximum efficiency.
Our newly expanded line includes all standard models in beautiful designs as well as a qualified engineering service for custom jobs.
Gloekler Builds: Reach-Ins, Walk-Ins, Dual Temp Reach-In and Walk-Ins, Bakery Freezers, Double Duty Display Cases, Self-Serve Reach-In and Meat Cases, Bottle Coolers, Mortuary Refrigerators, Single Duty Cases, Delicatessen Cases, Ice Cream Hardening Rooms, Self-Serve Dairy and Vegetable Cases, Counter Top Display Cases, Self-Serve Freezers, Full Vision Cases, Three Level Produce Cases, Cook's Tables, Chef's Tables, Glass and Solid Doors, Fish and Poultry Display Cases.
AVAILABLE IN THESE FINISHES
Porcelain, Stainless Steel, Baked White Enamel, Galvanized, Air Dry Grey Enamel.
Inquiries solicited for special and custom built refrigerators in either standard or low temperature.
PROFITABLE FRANCHISES AVAILABLE
Write us today for territories, details, and our new catalog with prices. Address your inquiry to:
GLOEKLER REFRIGERATOR CO.
2900 West 20th St.
Erie, Penna
Gloekler
ERIE, PA.

FILTRINE "Taste-Master" PURIFIER

Stop service calls . . . keep out rust and sludge . . . open new doors to sales acceptance!—with coolers, ice-makers, sell "Taste-Master"!—checks chlorine, traps sediment; promotes service-free satisfaction with all water processing appliances. Write—

Filtrine MANUFACTURING CO. BROOKLYN 38 • N. Y.
"Water Coolers and Filters for 40 Years"

LARKIN means low prices!

LARKIN CEILING HUMI-TEMP

Price is only one factor in the selection of any product—especially one that has so important a task as protecting valuable perishables. Performance must come first. Quality cannot be overlooked. Durability is highly important. Larkin has all of these. And Larkin has low prices, too. Compare them and see for yourself how low they are.

For the latest Larkin price list, see your wholesaler. If you wish, write direct to us. We shall be glad to send you one.

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers • Disseminator Pans.

WATCHDOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS INC.
519 MEMORIAL DR., S.E. • ATLANTA, GA.

What's New (Cont.)

2 Upright Freezers Added To Ace Cabinet Line

——KEY NO. C-524——

NEW YORK CITY—An 18.2 and 12.3-cu. ft. upright freezer has been added to the Ace line of home freezers, the Ace Cabinet Corp. announced recently.

They are constructed of electrically welded heavy gauge steel covered with 4 in. of high density fiber glass insulation.

The full door is all-steel with high efficiency thermal breakers and heavily insulated with semi-rigid fiber glass. An extruded rubber gasket insures a perfect seal. Heavy duty chrome plated hardware has provisions for locking. A special condensation retarding device is installed around the door opening.

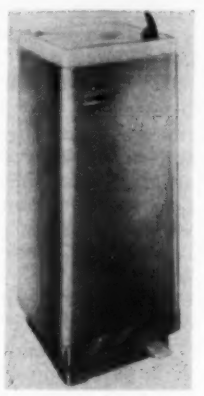
Four prime contact freezing surfaces—three refrigerated shelves and the bottom of the freezer compartment—are used for fast freezing. Additional freezing surface is provided at the top. Refrigerant tubing is securely bonded to the bottom of each shelf and protected by formed metal straps.

The automatic temperature control is pre-set at the factory. It is conveniently accessible for easy adjustment if necessary. A thermometer located in the inner door panel provides quick reading of cabinet temperature. The condensing unit is a high-capacity "Freon-22" type.

Frigidaire Introduces New Drinking Water Cooler Line

——KEY NO. C-525——

DAYTON—Frigidaire Div., General Motors Corp., has introduced a broad new line of bottle and pressure-type drinking water coolers, according to W. F. Switzer, manager of commercial and air conditioning sales.



The new water coolers are available in three pressure-type and two bottle-type models, with new, compact, lower design, and new operating features in both. All are self-contained and powered by the Frigidaire Meter-Miser refrigerating compressor.

The pressure-type models have a capacity for cooling 6, 12, and 18 gals. of water per hour, respectively, the company points out.

Innovations of the line include instantaneous cooling, a toe-operated, electric bubbler control, and a "Magic Action" bubbler that reportedly holds a uniform stream height even when water pressures are as low as 25 or as high as 150 lbs.

Other features are: splash-proof, white, stain-resistant, porcelain tops with provision for installing glass filler; gray-finished cabinet shells made of steel and Bonderite-treated for protection against rust; insulation of special, moisture-resistant, vermin-proof material, and adjustable glides on each corner for proper leveling.

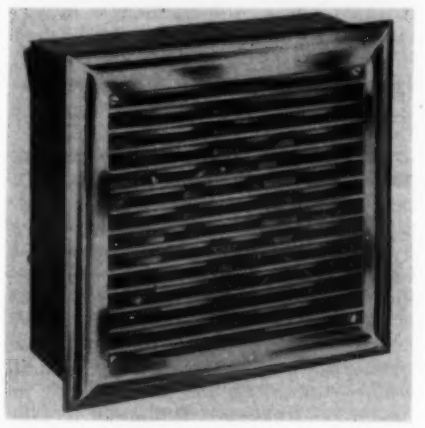
Also, a cold control allows the user to regulate the temperature of the water.

All three of the models are the same over-all size: height 38½ in., width 16 in., depth 18 in.

The two bottle-type models also have the new, lower design and have a capacity to cool up to 2 gals. of water per hour, depending on the model.

The recently-introduced model WBCR-1 features a refrigerated storage compartment located at the front of the cabinet that freezes and stores 28 ice cubes in two Frigidaire "Quickube" trays. It also has storage space for 36 6-oz. bottles or other items that need refrigeration, such as candy, food snacks, or biologicals and similar products.

Model WBR-2 is similar in design and construction, with the same over-all appearance, but does not have the refrigerated storage space. In addition, it has a cooling capacity of 2 gals. per hour.



Motor Opens, Closes Outer Door on Kitchen Wall Fan

——KEY NO. C-526——

MILWAUKEE—A motor operated exterior door that automatically opens when the fan is turned on and closes tightly when the fan is turned off is featured on two sizes of kitchen exhaust fans manufactured by the Broan Mfg. Co. here.

This feature, the company explains, provides protection against the weather and insects. The door opening device is called the "Motordor" and is incorporated on 10 and 12-in. wall fans.

The 10-in. fan bears the catalog numbers 11 (without grille), 11W (with white enamel grille) and 11C (with chrome-plated grille).

The 12-in. fan carries the catalog numbers 80 (without grille) and 80S (with stainless steel grille).

The grille is called the "Fantom-Grill," which, the company claims, provides "maximum, free air opening that conceals the fan interior and affords high efficiency air movement."

The 10-in. fan has a 13¼ by 13¼-in. grille and a 12¼ by 12¼-in. wall sleeve, adjustable 6 to 10 in. in length. It moves 600 c.f.m. of air and is powered by a General Electric "Unibearing" motor that requires no oiling and is said to provide no radio interference.

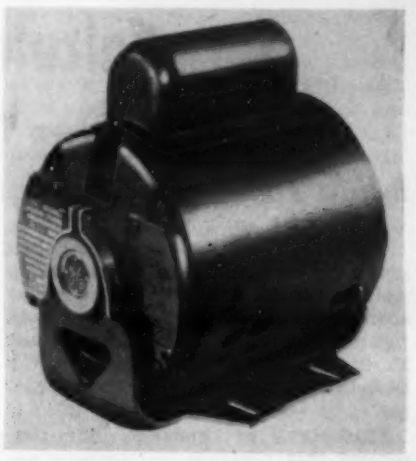
The motor is rated at 50 watts, 115 volts, 60 cycles, 1,550 r.p.m.

The 12-in. fan has a 16 by 16-in. grille and moves 900 c.f.m. of air. Its wall sleeve measures 14⅛ by 14⅛ by 9¾ in. long. It is non-adjustable and is finished in gray baked enamel. The motor is shaded pole, non-radio interfering, rubber mounted, and fully enclosed.

It is rated at 1/30 hp., 115 volts, 60 cycle, 1,550 r.p.m.

The manufacturer claims that in ceiling and soffit installations these fans pull rather than blow the air through the duct. With the fan at the outer end of the duct, there is no annoying fan noise in the kitchen, it is claimed.

He suggests that whenever possible the fans be installed near the ceiling straight through the wall and opposite the doorway.



G-E Offers Fractional Hp. Special Service Motors

——KEY NO. C-527——

SCHENECTADY, N. Y.—Two new special-service, fractional-horsepower motors, for applications requiring moderately high starting torque, have been announced by General Electric Co. Fractional Horsepower Motor Dept.

Rated at ½ and ¾-hp., 1,725 r.p.m., the new motors can be mounted in any position, and are "easily reconnectable" at the terminal board for 115 or 230 volts. They are smaller and lighter in weight than the corresponding general-purpose ratings, according to G-E engineers.

With starting currents which conform to NEMA standards, the motors can be used in evaporative coolers, attic fans, milking machines, compressors, garage tools, and home workshops. They are an extension of the ¼-½-hp. Form G special-service motor series inaugurated last year.

Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

What's New or Current Literature Available

Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....

Products Advertised
(list name, page, and issue date)

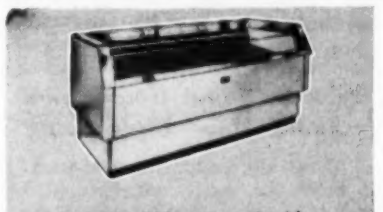
.....
.....
.....
.....
.....

(PLEASE PRINT PLAINLY)

Name ..... Title .....
Company .....
Street .....
City ..... Zone..... State.....
Type of Business .....

MAIL THIS FORM TO

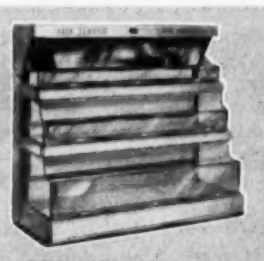
AIR CONDITIONING & REFRIGERATION NEWS
Reader Service Dept.
450 W. FORT ST. DETROIT 26, MICHIGAN



MODEL 707. Low and wide, this self-service case can be serviced front or back. Can be joined for endless display.

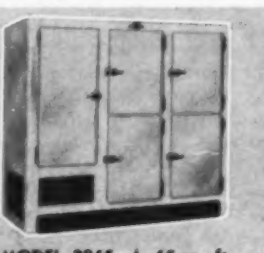
MODEL 6710. 10 ft. long open front case with extra wide display shelf. Ideal for produce display.

SERIES 3100. Endless top display cases, 7 and 10 ft. long. Set up in any length for profit displays.



MODEL 306. The sensational open case with THREE refrigerated shelves. For profit-making impulse sales.

MODEL 1407. Self-service frozen food display case. Attracts and handles more buyers, invites more sales.



MODEL 3865. A 65-cu. ft. reach-in refrigerator. One of the four popular Koch reach-in cabinets.

un-equalled TO YOUR CUSTOMER . . .
Knock-out beauty in stainless steel, porcelain, and glass. Long rows of frozen food, immediately available to the eye and hand. A clean, gleaming invitation to pick and choose from thousands of packages in irresistible, *un-ending* display!

un-obstructed

automatic self-defrosting KOCH FROZEN FOOD DISPLAY CASES

TO YOU . . .
10-ft. sections, each with 25-cu. ft., 1400-package capacity . . . *23½ sq. ft. visible at the product line.* Constant zero temperature where you want it . . . in every package, top-to-bottom, end-to-end, with no warm-up during the defrost, and no effect on store temperature outside the case. KOCH "8-AUTOMATIC DEFROSTING-8"; In 10-20 minutes, defrosting is complete, water is gone. At no time can contents warm up, for at no time can warm air enter the display compartment. The copper-backed mirror canopy is optional. Beauty! Economy! Money in your pocket!

un-cluttered un-ending

KOCH SINCE 1883 refrigerators, inc.
NORTH KANSAS CITY 16, MO.

SEND THIS COUPON today FOR FULL DETAILS

For Complete Information about Franchise Availabilities, Write or Wire Today!

KOCH Refrigerators ACRN-5
North Kansas City 16, Mo.
Please send me at once, without obligation, complete information on profit-making Koch Display Cases and Refrigerators.
Name_____
Address_____
City_____ Zone____ State_____

Calculating Cooling Loads (1)

Ability of Structure To Absorb Quantities of Heat Without Changing Inside Temperature Is Basis for Deciding How Much To Undersize Equipment

BETHLEHEM, Pa.—"At lower than peak loads, cooling equipment which has been radically oversized will not economically hold moisture levels at the desired control point," points out F. W. Deady of the Bryant Heater Division, Affiliated Gas Equipment, Inc.

"Industry, in general, has answered this problem by strongly recommending against the oversizing of equipment even to the point of stating that it is preferable to install equipment which will be slightly undersized for the peak load condition," Deady declared at the Technical Conference on year-round residential air conditioning held recently by Lehigh university's Mechanical Engineering Department.

Why This Method Has Merit

"Strange as it may at first sound, this idea has considerable merit and for this reason. Let us say, for the sake of argument, that for 80% of the cooling season a daily average cooling load equal to or less than 90% of the peak cooling load will be experienced.

"Equipment sized to meet this load will then operate continuously for much longer periods of time, in this case, at least 20% of the entire season, and, even under those conditions where the load represents less than the full output capacity of the equipment, longer operating cycles will result as a consequence of this same capacity reduction.

"This means that for a substantially greater part of the season optimum comfort conditions will be readily attainable. With respect to those short periods of time during which the equipment will be overloaded we have this argument to offer:

"You must take into account the thermal mass of the building and all its contents," Deady said. "During off-peak periods a considerable portion of this mass will have been reduced to a temperature which will be essentially equal to the comfort level. During those short periods of time when the equipment will be overloaded, all or nearly all of the resultant heat gains will be devoted to warming up this same mass.

"When you consider the tons of material thus involved, it becomes obvious that the resultant increases in temperature within the structure will be so slight as to likely be imperceptible to its occupants. Moreover, once the peak load has passed, the equipment can once again operate so as to gradually dispose of the excess heat, (during the evening hours, say). This will further aid in maintaining the equipment on a desirable continuous operating cycle.

"This practice has been tried time and time again and in may cases, has proven itself to be not only sound from a comfort standpoint but also to result in a greater economy of operation. Those cases which have proven to be exceptions have in every instance been unreasonably undersized," he declared.

How Much Should Equipment Be Undersized?

"From a practical standpoint, we know, therefore, that equipment is best undersized somewhat. We know also that, at best, the chances of a 3-ton unit's being able to handle a load which calculates out at 5 or more tons of cooling are, to say the least, slim. On the other hand, we are confident that this unit will do a comfortable job of cooling for a load which calculates out at as much as 3½ tons. But—will it handle a 4 or 4½ ton load?

"The answer to this question, of course, will depend on the ability of the structure to absorb large quantities of heat without appreciable change in temperature and, on the ratio between the length of the periods of over and under capacity of the equipment.

"Any short-cut method which might be devised along these lines, therefore, must needs take account not only of the physical characteristics structure of certain very basic types of residential but also of the physical and cyclical nature of the influences of their environments upon them.

Brick or Stone House Can Stand More Undersizing

"It would seem, for instance, that a brick or stone constructed house could stand somewhat more in the way of undersizing than a light frame constructed house and a home exposed to a wide daily range of outdoor dry bulb temperatures will be enabled to get by with smaller capacity equipment than one located in a low daily range area."

In discussing over-all problems of calculating residential cooling loads, Deady commented: "Studies based on man, as an individual, have pretty clearly established that he will experience a healthful comfort condition provided that the temperature, moisture content, odor level, solids content, and rate of movement of the air in his immediate vicinity can be maintained within certain generalized limitations.

"Practically speaking, experience, with respect to the durability of furnishings, clothing, etc. as well as the over-all economics of operation has shown that an indoor air condition of 80° F. dry bulb temperature and 67° F. wet bulb temperature (or a 50% relative humidity condition) will serve as an generally satisfactory indoor design control point. Obviously since this condition occurs on the [ASHVE comfort] chart in a region where only 70% of the individuals examined have reported a comfort sensation, 30% of the total will not be completely satisfied.

Maximum Cooling Load Is Strictly Transient

"On the other hand, it should also be borne in mind that the maximum cooling load for which we are designing is, by nature, strictly transient in character and, hence, for by far the greater bulk of the operating cycle, equipment capacity will be fully adequate to providing a lower comfort condition, say 77° F. and 50% relative humidity, at which condition, 100% of the individuals concerned will experience complete comfort," Deady said.

"Let us, then, examine a highly generalized residence in some detail and, therefrom, attempt to predict from what sources will come the load which we must anticipate. First of all, we see that we have a temperature differential existing across the walls bounding the space which we wish to condition simply as a consequence of the higher relative temperature of the air external to it.

"This implies a conductive heat gain to the interior from the outside which will follow the form of the classical heat transfer equation:

$$H = k \times A \ (to - ti)$$

where:

H = heat conducted B.t.u./hr.

AIR CONDITIONING (Year-Round Residential)

A = area in sq. ft.
k = averaged constant typical to material of which wall is constructed
to = temperature of outside of wall
ti = temperature of inside of wall

"Second, we have a source of radiant energy emanating from the sun which will tend to augment and amplify the conductive heat gains. Due to the opacity of wall and ceiling surfaces, a portion of the heat from the latter source will largely be absorbed or entrapped at outer faces of these surfaces and will proceed from thence in two directions:

"(1) By conduction through the wall to the interior of the structure where it serves to augment the operating load on the cooling equipment.

"(2) By convection away from the outer surface to the surrounding air.

"That portion of the incident radiant energy not directly entrapped in the wall surface itself will be reflected back into the surrounding atmosphere. The governing factors which determine what proportion of the incident energy will be absorbed and what proportion will be reflected away are the angle of incidence at which the sun's rays strike the surface in question together with the quality or texture and color of the surface itself.

Nature of Heat Flow from Walls and Floors

"In any event, you will note that insofar as walls, floors, or ceilings are concerned, as a consequence of the opaque nature of their construction, heat flow from their outer to inner surfaces will be for all practical purposes strictly conductive in nature," he declared.

"At first glance then, it would appear logical to assume that all that would be necessary in order to predict the conductive heat gain from outside sources would be to measure the external surface temperature of each unit area of the walls bounding the conditioned space, subtract from them the indoor dry bulb temperature and then multiply this difference by the "k" factor and area involved. In practice, however, several factors accrue which effectively render such a procedure untenable:

"(1) The presence of the sun coupled with roof overhang, wall offsets trees, adjacent structures, etc., serves to create abrupt and marked differences in exterior wall and roof temperatures from point to point over the entire surface of the structure.

"The prospect of scrambling from foot to foot over the walls, roof, doors and windows of any given residence in order to determine these temperatures is in no way appealing. Nor is the prospect of solving and totaling the infinitude of $H = k \times A \ (to - ti)$ equations which would result.

Temperatures on Outer Surfaces Constantly Changing

"(2) The temperatures on the outer surface are constantly changing in magnitude as a result of the sun's movement from east to west over a given day and from north to south over a given season, as a result of the cooling or heating effect of external winds, as a result of variations in the refractive effect of moisture in the outer atmosphere on the sun's radiation and, lastly, as a result of the weathering effect of the atmosphere on the surface texture and on the color of outer walls.

"These latter factors measurably affect the ability of the outside wall to absorb or reject radiation from the sun. These constant changes in outside surface temperatures obviously impose a rhythmic effect on the overall instantaneous heat gain to the structure and imply the presence of periods during which these heat gains will tend to achieve maximum and minimum values.

"(3) We have already seen where the effect of the sun will be such as to cause certain external wall surface temperatures to attain values in excess of outdoor air temperatures. In such instances, obviously heat exchange from such surfaces will take place in two separate directions. One, through the wall by conduction to the interior of the structure. The other, by convention to the outside air.

"Heat gains to the structure in such instances will therefore not be in direct proportion to the temperature differential existing across the inside and outside wall surface temperatures.

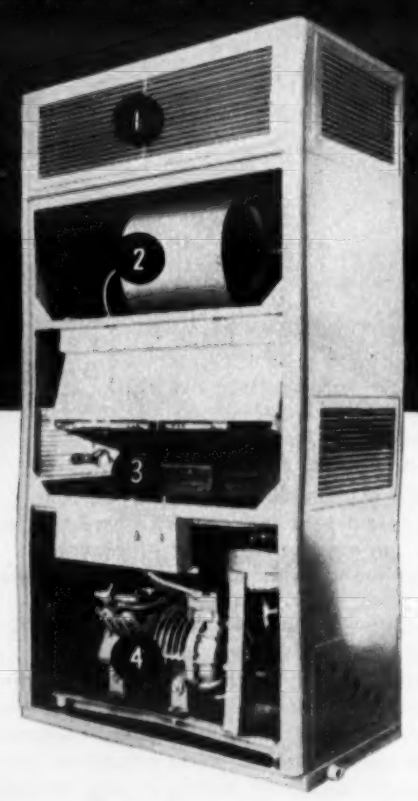
Requirement of Short Method

"From the foregoing, it follows that any short-cut method for predicting heat gains due to conduction, if it is to be of any real value, must

(Continued on next page)

AIR CONDITIONING UNITS HAVE TO BE RELIABLE . . .

Every time you recommend an air conditioning unit, you lay your reputation on the line. The unit has to meet the requirements of the job in each and every case. With BAKERAIRE, constant, accurate output is assured by balanced functioning of all parts.



1. Plenum diffuses air in any direction by simple adjustment of louvres.
2. Slow speed, full air capacity of the Fan Section balances with
3. The Coil Section, in which a 5 row coil has ample surface to remove moisture and heat, balanced with
4. The quiet efficient Compressor Section where the controls are integrated for automatic operation and complete safety protection. For final protection the interlock relay prevents short cycling of the compressor unit.

These features cut installation and maintenance time costs:

All water connections are run to an external utility panel, eliminating inconvenient internal connections

All electrical connections are integrated in one panel in front of the unit

All functional parts are easily accessible through the removable panels

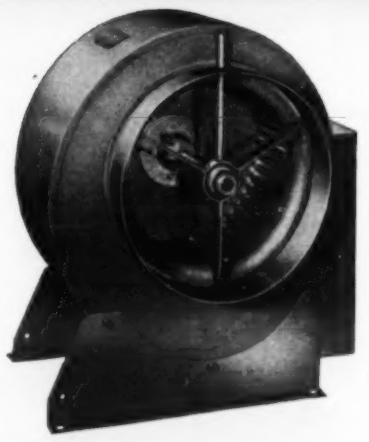
For further information, just write to:

BAKERAIRE CORPORATION
South Windham, Maine
Offices in Principal Cities

LAU

performance — economy — quality

SINGLE INLET BLOWERS



Single Inlet (series si) Blowers feature many unusual performance characteristics, making them ideal for a wide variety of installations. Built to the very highest standards of quality and particularly noted for long, satisfactory, trouble-free service. These and many other uses:

- ventilating industrial machinery
- ventilating kitchens
- air conditioning and cooling systems
- ventilating dip tanks and baths
- ventilating welding machines
- removing heat from laundries

—may be used for practically all types of air removal—with angle of discharge and position of motor mounting to meet the precise need.

Write for Catalog No. 68

The LAU Blower Company, 2202 Home Ave., Dayton 7, Ohio
World's largest manufacturer of furnace blowers

Calculating Residential Cooling Loads--

(Continued from preceding page)

needs account for the periodical nature of these gains with respect to any given time as well as provide an integrative means for averaging out the temperature variations from point to point on the surface of various walls of sufficiently typical construction and orientation relative to the sun.

Sol-Air Method Described In ASHVE Guide

"We feel that this feat has been accomplished to a great degree of nicety in the soon to be forthcoming National Warm Air Heating and Air Conditioning Association method for heat gain calculations which is in turn based on the Sol-Air method as described in the ASHVE Guide.

"This method makes use of what amounts to a synthesized 'effective temperature difference'. This 'effective temperature difference' factor is one which when multiplied by the 'k' or 'u' factor for a given wall construction and the area of that wall will give conducted heat transmission value which will be equal to that amount of heat actually transmitted.

"In general this 'effective temperature difference' or 'Sol-Air' factor may or may not coincide in magnitude with the actual temperature difference existing across the inner and outer wall surfaces. In cases such as we are not considering, where heat is being transferred simultaneously in several directions and by differing media, such a coincidence will almost never be found," Deady said.

"In order to be useful, it is necessary that these 'Sol-Air' or 'effective temperatures' must be experimentally determined in terms of a variety of different types of basic wall construction and for a practical range of outdoor conditions.

"In the case of the aforementioned National Warm Air Heating and Air Conditioning Association method, tabular values of these "effective temperature differences" are provided for two different times of the day, for a wide variety (seven) of wall constructions, for various orientations of these walls with respect to the eight major cardinal directions, for outdoor-indoor design temperature differentials of 10°, 15°, 20°, and 25° F., and for either dark or light colors.

Different Table Covers Each Of 3 Major Areas

"A different table is provided to cover each of three major areas of this country. These major areas differ, each from the other, according to whether their maximum average daily swing between maximum and minimum outdoor dry bulb temperatures is between 12° and 15° F., in which case it is classified as a "low daily range," or whether this swing extends to between 16° and 25° F., in which case it is considered to be a "medium daily range."

"The remaining classification covers the 'highest daily range' and will pertain to those areas in which the maximum daily swing will lie somewhere between 26° and 40° F."

At this point Deady showed how the data would be used to calculate heat transmission gains through the walls of a residence located in the immediate vicinity of Cleveland where the "medium daily range" classification applies, and the summer outdoor design dry bulb temperature "has been pegged at 95° F." in the ASHVE Guide.

"Since we are attempting to produce an 80° F. indoor design temperature at peak outdoor conditions, we utilize that line which gives us factors based on a 15° F. 'design temperature difference.' Groups of factors are provided for both dark and light colored walls separated according to their orientation at either 8 a.m. in the morning or 4 p.m. in afternoon.

"For a particular total instantaneous load calculation on any given residence it is anticipated that use will be made of those factors quoted for 4 p.m. since this generally represents that period of the day when transmitted heat gains will be most extreme. The factors for 8 a.m. are provided so that spot rechecks can be made for individual rooms where unusual wall to glass area ratios may indicate the presence of an abnormal load condition.

"In any event, multiplication of the proper 'effective temperature difference factor' or 'Wall Heat Gain Constant' as it is called here by the area in square feet and 'U' factor of the wall under consideration will give the predicted wall heat gain total in terms of B.t.u./hr. for that wall.

Ceiling or Roof Gains Greater Than Wall Gains

"Ceiling or roof heat gains are apt to be much more severe than wall heat gains due to their longer exposure and more acute angle incident to the sun. The factors shown for each temperature differential grouping provide a means for evaluating heat gains through these surfaces.

"Note that as a result of the more acute angle of incidence of the sun's radiation it has not been found necessary to provide separate factors for light colored roofs. This follows from the notion that the amount of reflection from a surface decreases measurably as the angle at which the radiation upon that surface becomes more acute," Deady said.

"It should be pointed out that the roof heat gain factors herein quoted are based on the area of the ceiling contained under that area rather than on the external surface area of the roof itself. Another table will contain correction factors by means of which the roof heat gain constants can be modified in order to account for insulation or ventilation. Either of these factors, if present, would of course tend to reduce the actual heat gain into conditioned spaces.

Floors Over Unconditioned Area Figure Like North Wall

"Floor heat gains are generally disregarded in those instances where they are located directly over basements, crawl-spaces or upon the ground itself. This is logical since temperature differences across them under such conditions are not apt to be ample enough to cause an appreciable amount of heat transfer one way or the other. On the other hand, floors located above unconditioned spaces are likely to encounter somewhat greater temperature differences.

"In practice these temperature differences closely approximate those which prevail across walls having a northern exposure. For this reason, it is recommended that the floors located over unconditioned spaces should be treated just as though they were, in fact, north walls. This same sort of reasoning applies where conditioned spaces are bounded by interior partitions or ceilings rather than outside walls and where these partitions or ceilings in turn border an adjacent unconditioned living space.

Heat Gains Through Glass

"Heat gains through glass areas will occur in a markedly different manner than those through walls; for several important reasons:

"(1) As a consequence of their transparency, their resistance to the transmission of radiant energy from the sun is negligible as compared with that of walls, ceilings etc.

"(2) Temperature differentials from their outside to inside surfaces are apt to be substantially lower than those for walls. Hence, there is a greater tendency for convective, as well as conductive and radiant heat transfer to occur away from their inner surfaces.

"(3) Their thermal mass relative to those of walls is apt to be substantially less. It follows that their ability to store large quantities of untransmitted heat is likewise less by comparison. It also follows that they will tend to attain substantially higher inside surface temperatures than will adjacent wall areas.

"Shading, of course, plays a highly important part in determining the quantity of radiation which will actually be incident on a given glass area at any particular instant of time. This, as well as the angle of incidence of the radiation relative to the plant of the glass, will clearly be a function of the sun's position and, consequently, for any given exposure will tend to wax and wane periodically with respect to time, and the opacity of the outer atmosphere.

"Heat transfer through glass areas, in a manner analogous to that through walls, will therefore tend to behave in a cyclical manner, rhythmically changing with respect to the extremities of outdoor conditions," Deady declared.

"There is no reason to expect, moreover, that heat transfer through glass and wall areas bounding a conditioned space will occur in any fixed degree of resonance or phase with respect to each other. In fact, a multitude of evidence exists which would seem to indicate that such is very definitely not the case. This phenomena, it would appear, can logically be laid to the differences in thermal mass of these two substances, the ratio of their respective areas, and the amplitude of swing of outdoor conditions over the period of any given outdoor weather cycle.

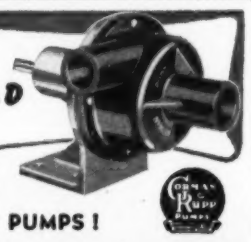
"In general, experience has indicated that much closer coupling is apt to be found between the period and amplitude of indoor heat gains through glass areas with respect to outdoor conditions than will be found in the case of wall, floor, or ceiling areas.

"The extent of 'lag' of the latter gain behind that of the former is, of course, a matter of great concern and is an important part of the investigations currently under way in connection with the summer air conditioning research program at the University of Illinois.

"The importance of this lag can perhaps be explained in this way. For a given peak outdoor condition there will be a corresponding peak heat gain through the wall, floor, and ceiling surfaces and another corresponding peak heat gain through glass areas. For any one instant of time, however, the total peak heat gain will not be the sum of two gains since the 'lag' effect will tend to cause one to occur at a later time than the other.

(To Be Continued)

• The MANSFIELD LINE



• TINY NEW CENTRIFUGAL PUMPS!

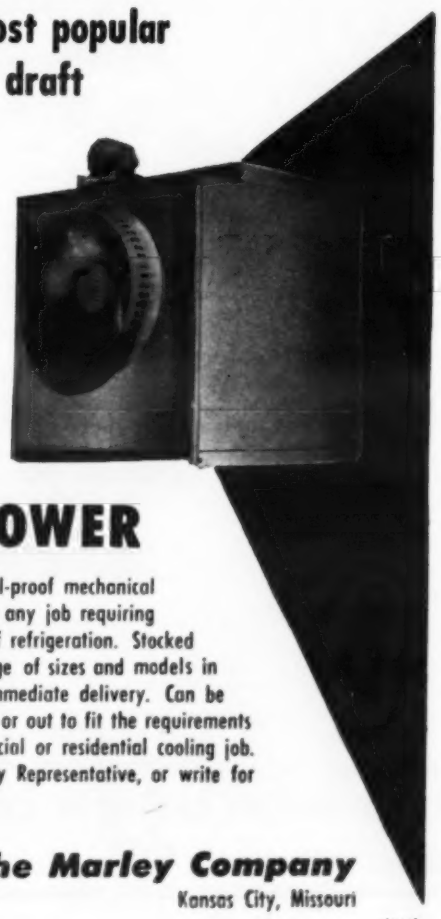
Serving wide range of applications. Liquid transfer, machine tool coolant, plating baths, air conditioning, chemical handling, abrasive solutions, domestic and commercial appliances.

Built on pedestal for belt drive as shown, also close coupled to electric motor. Materials vary with pump use - synthetic rubber bodies, stainless steel shafts are standard.

Engineering assistance on O. E. M. applications. Inquiries invited.

THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

World's most popular mechanical draft COOLING TOWER...



the Marley AQUATOWER

The simple, fool-proof mechanical draft tower for any job requiring 2 to 60 tons of refrigeration. Stocked in a wide range of sizes and models in 30 cities for immediate delivery. Can be located indoors or out to fit the requirements of any commercial or residential cooling job. See your Marley Representative, or write for Bulletin AQ-53.

MARLEY The Marley Company
Kansas City, Missouri

MEET BRYANT'S NEW "Command-Aire" TWINS

... now in mass production to make year 'round home conditioning a mass-market sales opportunity ... for you!

Home builders and home buyers everywhere are enthusiastic about the new Bryant "Command-Aire" Twins. Here's why:

- They're being mass produced to bring the price of *complete* home comfort within the budget of *average* home buyers . . . *30 to 50% less than heretofore!*
- They're independent heating and cooling units matched in appearance and size. Builders can install the furnace first and offer the addition of air conditioning immediately, or later, according to the convenience of the buyer.
- They're being aggressively promoted on national and local levels—even right on the home site—to presell thousands who will buy homes this year.

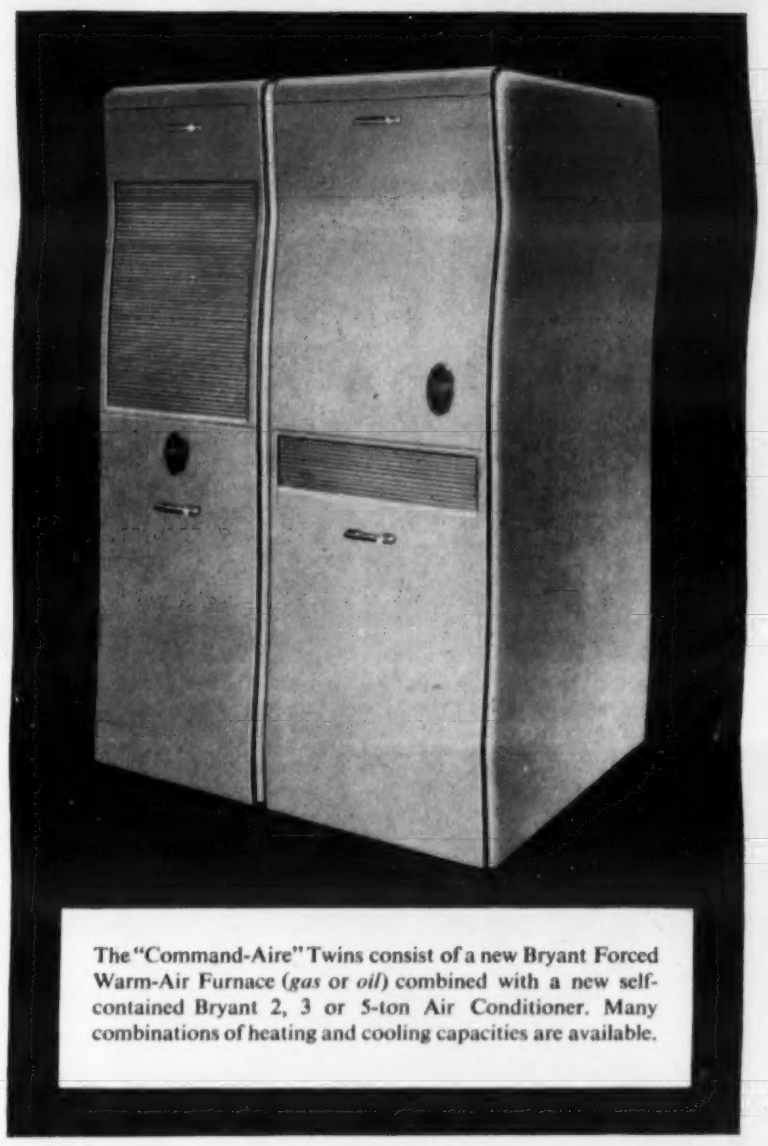
Here is a new, big-volume, high-profit sales opportunity for alert heating and air-conditioning dealers!

Homeowners want year 'round conditioning because it adds extra enjoyment . . . extra resale value.

Bryant's "Command-Aire" Twins now make it possible for them to have it at a price millions can afford.

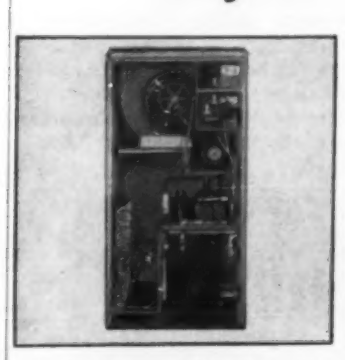
You can be one of the first to profit—by investigating this opportunity today!

Your nearby Bryant Distributor will be happy to provide complete details. Or write direct to Bryant Heater Division, 17825 St. Clair Ave., Cleveland, O.



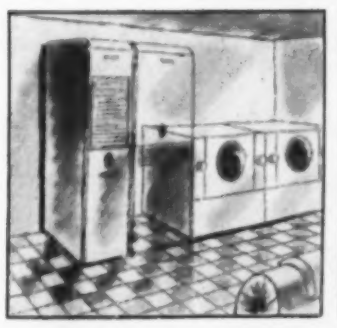
The "Command-Aire" Twins consist of a new Bryant Forced Warm-Air Furnace (*gas* or *oil*) combined with a new self-contained Bryant 2, 3 or 5-ton Air Conditioner. Many combinations of heating and cooling capacities are available.

bryant® means business... better business for dealers



Air Conditioner is independent unit with its own blower, filter and controls . . . eliminates need for air to pass through both units . . . improves both heating and cooling efficiency.

Five-year warranty on the hermetically sealed cooling compressors of the 2 and 3-ton "Command-Aire" cooling units . . . has tremendous appeal to prospective buyers.



One cooling unit sells hundreds! Builder can install "Twins" in his model home and leave space for the cooling unit in the others—where your prospects will live.

Powerful promotion presells "Twins"! Extensive national advertising and local publicity and promotion will presell the "Twins" to hundreds in your area.

Continuous Freezer Efficiency

Efficiency of a Machine Is Equal to How Well the Operator Understands It; Service Problems and High Quality Product Can Be Controlled

DETROIT—How to obtain maximum efficiency from a continuous ice cream freezer and some of the refrigeration problems involved were discussed recently by Gil Wymond, district manager here for Cherry-Burrell Corp.

"How well the operator understands his machine and the efficiency with which he operates that machine will have a great deal to do with the quality" of the ice cream produced, Wymond declared.

Efficiency, he said, depends on several factors. Two of the most important are:

Don't rate the efficiency of the continuous freezer as a result of the gallons of ice cream it will produce. If you do, the quality will usually suffer.

The maximum a freezer should be operated is that at which you can get the desired stiffness and dryness to the ice cream.

Wymond suggested that the operator make a test to get a better understanding of how a quality product can be obtained from his freezer. Here is his test:

"Using vanilla mix from the same batch and running all samples to the same overrun, do as follows:

"1. Freeze one sample with the freezer running at its greatest capacity, freezing the ice cream as soft as possible and yet obtain a definite overrun of 90%. After freezer has settled down, fill several pint packages, mark them, and place immediately in the hardening room.

"2. The freezer should be operated at somewhere near its rated capacity and when the ice cream is good and stiff and overrun proper, take several more pint samples and place in hardening room.

"3. Now slow the machine down to the lowest capacity it will operate and with 90% overrun take other samples and place in hardening room.

"Let the samples remain in the hardening room until they have reached approximately room temperature. Remove from room and open cartons, permitting them to soften before sampling.

"Sample No. 1 will be an underfrozen sample. It will be darker in color and will melt down much faster. It will not taste as rich.

"Sample No. 2 will be the better ice cream. It will taste richer, have a better body, and will be slower melting down. Some have judged a sample made this way to be several percentage points higher in butter fat over No. 1 sample.

"Sample No. 3 will be what is called an overworked ice cream. It will be fairly rich tasting, very slow melting, and will not have the body of No. 2 ,sample.

"Our reason for wanting this test made is to permit those who are to operate the continuous freezer to learn what quality ice cream looks like and tastes like so that they may strive for it when operating. It is from the appearance of the product being produced that he judges quality more than any other factor."

Wymond said that refrigeration has caused the greater part of the trouble with operation. He commented that his remarks referred primarily to ammonia-type refrigeration equipment, because that is where most all of his experience lies.

"When refrigeration troubles are being experienced," he asserted, "the ice cream cannot be frozen stiff as usual, the temperature will be high, and motor load low. It is impossible to create a load on the motor.

"If the compressor is too small this trouble will be experienced unless you run at lower capacities. Lines not sized properly will prevent low enough pressure in the low side to freeze properly. Oil in the system is the most common cause of poor freezing.

"The refrigeration requirements for a continuous freezer can be estimated on this basis: That 30 gals. per hour of ice cream frozen at 100% overrun will require 1 ton of refrigeration at -17° or at 5 lbs. back pressure.

"For overrun less than 100% refrigeration can be figured on the basis of freezing 15 gals. of mix per hour per ton. These are only approximate figures, for as most of you know, sugar, total solids, and other ingredients in the mix affect tonnage requirements. What has been stated is based on a standard mix of 12% fat and 38% total solids, with 15% sugar.

Use Ample Suction Lines

"Suction lines are very important. They must be of ample size. It is far better to have them too large than too small. The headers we recommend, when installing two or more continuous freezers, should be double the size of the suction line at least.

"The suction line from the freezer to the compressor should not have other equipment discharging into it which would create a sudden gas surge, like a batch freezer.

"If the back pressure changes only 2 or 3 lbs. higher and remains there a few seconds it will affect the operation.

"A rule of thumb method to calculate minimum suction line sizes is to figure .8 sq. in. cross section area of suction line pipe per 100 ft. of length.

"For instance, the suction line from a 150-gal. per hour continuous freezer is 1½ in. in size; 1½ in. extra heavy ammonia pipe has an area of 1.76 in. which is too large. In fact it is the same size as is used on the 300-gal. freezer.

"However, if the line to the compressor room is longer than 100 ft. or has a number of bends or ells the next size larger pipe should be used.

"Liquid lines seldom cause trouble by being too small, for it is my understanding that a 1½-in. line will supply approximately 50 tons of refrigeration at 150 lbs. head pressure. That would be enough to run five of the 150-gal. continuous freezers.

"Oil in the system is one of our greatest worries. The continuous freezer evaporates approximately 1 lb. of liquid ammonia per gallon of ice cream frozen.

"All systems contain some oil. However in recent years I have seen a few plants that have little or no oil in the liquid ammonia that supplies the freezer.

"One can figure as follows: If the refrigerating system contains 1/100 of 1% of oil, which is very low, and if the freezer evaporates 1 lb. of ammonia per gallon of ice cream frozen, for every 1,000 gals. of ice cream made, 1.5 oz. of oil would be in the evaporator or accumulator.

"In certain of the continuous freezer designs 4 or 5 oz. of oil would cause trouble.

Type of Oil Important

"Since we can not keep all the oil out of the system the type of oil used becomes more important. The oil must have a pour point of -25° F. for the freezer operates around -17° F. and a flash point of over 300° F. because of the high head pressures sometimes reached.

"The oil should drain freely from metal surfaces and should be wax free. Oils that have too high pour point congeal and stick to the side surface of the freezing cylinder. They cause the feed valve to become sluggish and affect freezer operation.

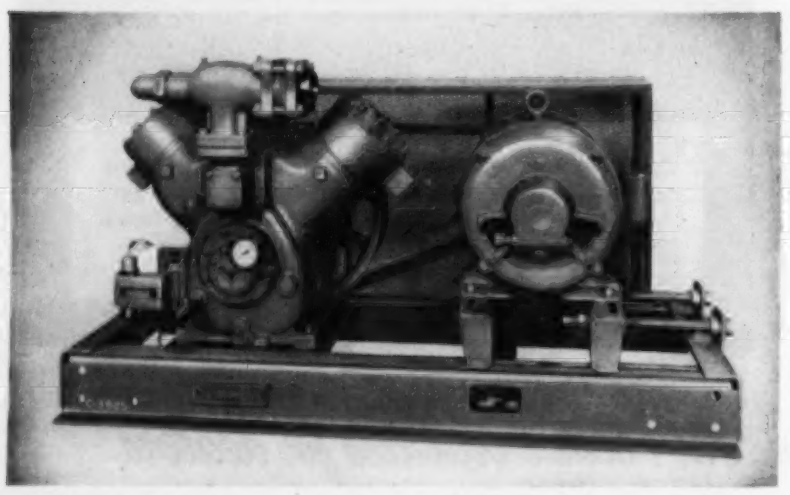
"A quick check on the oil you are using would be to drain a sample from the freezer. Place it in the hardening room which should be -15 F. or colder. Let it remain until down to room temperature.

"If the oil at room temperature will not pour it will cause trouble in the freezer. In cases where large quantities of oil are in the system the freezer will usually start off well in the morning and gradually fall off in capacity as the run continues unless there is ample refrigeration.

"As the oil accumulates, the capacity will drop or the ice cream will

(Concluded on next page)

HANDSOME WORTHINGTON PACKAGED AIR CONDITIONERS are available in a complete size range from 3 to 15 hp for installation in homes, offices, restaurants and stores. (Package units for remote installation are also available in 15, 20 and 25 hp sizes.)



WORTHINGTON'S NEW "J" FREON COMPRESSOR, designed to run at optimum speed, combines all the advantages of high and low speed machines. Electric unloading, improved internal manifolding and a new force-feed lubrication system are just three of the many advancements in functional design incorporated in the "J" compressor.

Why is Worthington the fastest-growing name in air conditioning and refrigeration?

That's easy! The big reason is that no other manufacturer makes so complete a line. From giant refrigeration systems down to the air-conditioned corner drugstore—Worthington can handle any job, with exactly the right equipment. This complete unit responsibility pays off in more satisfied customers.

And Worthington distributors know that their customers get the benefit of over half a century of air conditioning and refrigeration experience in every piece of Worthington equipment.

Worthington Corporation, Air Conditioning and Refrigeration Division, Harrison, New Jersey. A.3.9

THE NEW WORTHINGTON WINDOW AIR-CONDITIONER is the talk of the industry. Acclaimed by leading interior decorators, this beautiful unit is the ultimate in home air-conditioning. And for use with any type of central heating system, Worthington residential air conditioning is available in sizes of 3 and 5 hp.

The Best Franchise . . . The Most Complete Line

WORTHINGTON
Air Conditioning and Refrigeration

Now you can get PA-100, Davison's refrigeration grade silica gel in the pour spout can. With this can there is less chance of spilling the product and there is a minimum of moisture pick-up while can is open. When cap is replaced there is a positive seal assuring you of an active product at all times. And with the new pour spout can you get the same superior product that has always led all refrigerant drying agents. Unlike many refrigerant drying agents, PA-100 is completely inert . . . contains no corrosive compounds. In fact, PA-100 removes acids and corrosive compounds as well as water. Because PA-100 dries by physical absorption, not by chemical reaction, no corrosive salt or acid solutions are produced.

PA-100 is a hard granular material which will neither dust nor powder. PA-100 does not disintegrate or liquefy, never shrinks or swells in the system. PA-100 retains its particle size and shape indefinitely.

Get PA-100 in the new spout can today. For more information see your Davison Field Service Engineer or write

Progress through Chemistry

THE DAVISON CHEMICAL CORPORATION

Baltimore 3, Maryland

PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS, AND SILICOFLUORIDES. SOLE PRODUCERS OF DAVCO GRANULATED FERTILIZERS.

Continuous Freezer Efficiency--

(Concluded from preceding page)

not be as stiff. However if the back pressure can be lowered to a colder temperature the oil film can be penetrated and capacity maintained.

"We have found that oil will drain more freely from polished surfaces and all manufacturers are polishing the outside of their freezing cylinders.

"If the freezer is being starved for liquid ammonia you will also have trouble. The cause might be too little liquid ammonia in the system, float stuck, lines too small, or head pressure too low for the size lines.

Efficiently Cooled Condensers Lower Head Pressures

"We are seeing lower and lower head pressures these days as a result of larger and more efficiently cooled condensers. Oftentimes the needle valve seat is not large enough to permit of the required amount of liquid to enter the accumulator or, in the case of those freezers that operate with the jet system, there may not be enough pressure to cause the jet to function which would starve the evaporator.

"Strainers could be blocked. To permit of a starved condition to last very long usually results in the needle valve being damaged as a result of the gas that finds its way into the high side when the liquid seal is broken.

"When liquid is again flowing properly the needle valve will not seat properly and flooding will result, which is harmful to the freezer and the compressor.

Watch Temperature of Mix

"It might be well at this point to mention the importance of the temperature of the mix going to the freezer. The higher the temperature ahead of the freezer the greater the refrigeration load at the freezer.

"A difference of 10° in the mix means a difference of 10% in the total refrigeration load on the freezer. Thus if mix entering the freezer is 32° it is better than 40° F. Forty degrees is usually specified as one of the requirements for successful operation of a continuous freezer.

"Where the colder mix is found you will always find a better operation. The cold wall tanks of today make colder mix possible.

"Blades are another very important matter for successful efficient operation.

"Blades must be maintained according to the manufacturer's instructions if good operation is to be expected. Dull or worn blades will certainly affect efficient operation as will blades that are too narrow.

"The blades must do a good job of scraping or the film of ice that forms will not be scraped off clean. This reduces the heat transfer greatly. When blades are not scraping properly good dry stiff ice cream cannot be made.

"When the motor load is heavy and the temperature of the ice cream is higher than usual you can look for blade trouble. New blades may not perform at their best because they do not fit the cylinder properly.

"A certain amount of wear-in is necessary before full scraping action can be had. No freezing cylinder is perfectly true and until the blades have fitted themselves by wear we cannot expect the best results. That is the reason why the same blades should always be used in the same freezer barrel.

"In sharpening the blades never file or cut away the old cutting edge—cut down to it but never destroy it. If you do, the blades will again have to wear-in before full scraping can be expected.

"Worn bearings in which the dasher turns can cause poor scraping. The dasher may have been dropped, smashing the blade holders so that they lose their flexibility. This will cause poor scraping. The dasher out of alignment would cause poor scraping.

Pumps Are Heart of Freezer

"Pumps are the heart of the freezer. Worn out pumps that are out of adjustment play havoc with the operating efficiency of the continuous freezer.

"If they are badly worn or out of adjustment it will be impossible to get proper overrun or you will not be able to operate up to capacity.

"On one type of continuous freezer, if the mix pump is worn so that slipping can occur, it will throw the freezer out of balance and control will be lost.

"On another type of continuous freezer, if the mix pump is worn, the second stage or higher speed pump will suck more mix that the pump would normally meter. This will throw mix and air out of balance, causing poor operation. In one day's operation a plant can easily lose the cost of a pump by putting out ice cream too low in overrun.

"In summarizing let me again emphasize that the continuous freezer is more than just a production machine and operating efficiency must be measured in terms of quality as well as the rate of gallons per hour of ice cream produced.

Quality Control

"Quality in your product that can be brought out mechanically in the freezer is quality at its lowest cost. The operator must know the range of quality control in his freezer, be able to recognize the quality he wants, and operate the freezer to get that quality. He must realize that conditions will vary from day to day and that can affect operation.

"The freezer cannot be operated by any standard formula. Gauge readings will vary, capacity settings will vary, as will the temperature of the product as it discharges from the freezer.

"The best indicator of quality is the stiffness of the ice cream as it discharges from the freezer and operating adjustment should be made, as required to freeze to the stiffness desired."

...I'M MAKING A SURVEY.. TELL ME.. HAVE YOU EVER HAD TROUBLE IN YOUR T-ZONE, SIR?
NAW.! MY T-ZONES NEVER GIVE ME TROUBLE.. THEY ARE ALL EQUIPPED WITH ANSUL T-FLO DRIERS. MY T-ZONES ARE NOW T-F ZONES.. TROUBLE-FREE ZONES ..AND YOU MAY QUOTE ME.. SIR!
ANSUL
T
A. COPTACK

SEE PAGE 27

Westinghouse Sturtevant Div. Picks Kalamazoo Distributor

HYDE PARK, Mass.—Stafford-Smith, Inc., of Kalamazoo, Mich., has been awarded a franchise to sell Westinghouse self-contained and field-assembled air conditioning equipment, according to W. B. Cott, air conditioning sales manager for the Sturtevant Div., Westinghouse Electric Corp.

Stafford-Smith has been in the air conditioning and commercial refrigeration business since 1940. The firm will serve Kalamazoo, Calhoun, Branch, Barry, Van Buren, St. Joseph, Cass, Barrien, and Allegan counties.

Feinberg UsAirco Director; McLain, Hawkinson Named To Sales Posts In 2 Divs.

MINNEAPOLIS — David E. Feinberg has been elected a director of United States Air Conditioning Corp., it was announced by Wesley J. Peoples, president.

Two executive promotions are also announced by UsAirco. R. D. McLain has been named manager of sales of the refrigeration division and C. F. Hawkinson has been appointed manager of sales of the general equipment division. The new appointees will serve under L. P. Hanson, vice president in charge of sales.

Feinberg, a vice president of the company, has been associated with UsAirco since 1940 and is a former sales manager of its refrigeration division.

Trane Co. Revises Air Conditioning Manual To Include Fan Chapter

LA CROSSE, Wis.—A newly revised edition of the Trane Air Conditioning Manual has been published by The Trane Co.

A new fan chapter has been added to the book to cover fan application and selection, basic fan laws and duct design data and nomenclature. This chapter adds to the manual complete information on design of air handling systems for air conditioning.

The present 380 page edition marks the 16th printing and second major revision since 1938. Since that time the manual has, according to the publisher, not only been popular with engineers and contractors, but has also been used as a text and source reference on air conditioning by colleges and other institutions of learning.

The Trane Air Conditioning Manual begins with a simplified presentation of the basic physical laws governing heat and cold and applies these laws to practical problems in air conditioning. A chapter on comfort and physiology of human heat control mechanism illustrates comfort standards. Other chapters on heat gain and loss, properties of air and the psychrometric chart, refrigeration and calculations for the conditioned air supply are among those given in the book on basic air conditioning system design and equipment application.

The manual can be purchased from The Trane Co., La Crosse, Wis. for $5.00. The new fan chapter is available separately for $1.00. Persons who purchased the Trane manual in the six-month period prior to publication of the new edition may purchase the new chapter for half price.

G-E Air Conditioning Added To Cooper's 'Mobilhomes'

GARY, Ind.—General Electric air conditioning has been added as a new feature this year to the unique "Mobilhomes" built by the H. L. Cooper Corp. here.

Unlike conventional builders who build their homes at the site, Cooper builds its Mobilhome in its factory plant and then transports the completed house to the site and puts it in place. Although mass production methods and unit assembly are used in their construction, the homes are all custom-built.

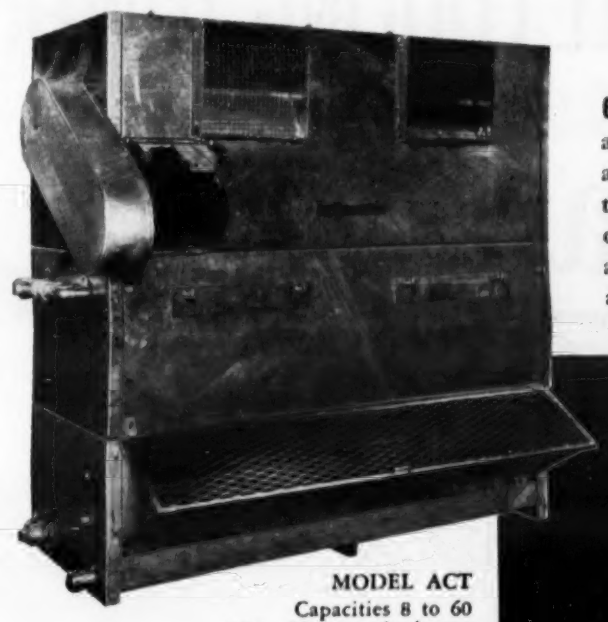
Cooper expects to build 150 units this year for delivery in and around Gary. The addition of air conditioning will give each home a complete G-E "Air-Wall" system of winter heating and summer cooling.

Mobilhomes come in a variety of two and three-bedroom styles. Prices start at $10,500.

To Cool New Raleigh Store

RALEIGH, N. C.—A complete air conditioning system will be installed in a one-story store building to be erected at 400 Daniels St. for occupancy by J. C. Penney Co.

NEW PRODUCTS?
Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.



MODEL ACT
Capacities 8 to 60 tons. 25 ton unit shown.

ease of installation: Acme's compact, pre-assembled, packaged units simplify field erection since they are ready for either indoor or outdoor service when they leave the factory; choice of air discharge direction with either front or rear air intake allows you to fit the job with minor field adjustments. A complete selection of pumps is available. They are integrally mounted and piped at the factory.

Acme
has what you are looking for in
COOLING TOWERS

top performance: Induced draft by means of centrifugal type fan wheels, dynamically balanced for smooth, quiet, efficient operation, assures constant capacity at all times regardless of wind conditions.

Acme's heavy duty all metal eliminators produce maximum changes in direction of air flow while removing entrained water droplets with low static loss. The new heavy gauge steel "Acme-Pak" is designed to provide the maximum in cooling effect.

Both the eliminator and pack are encased in a tight fitting exterior framework resulting in quiet operation and the prevention of air leakage, assuring efficient performance.

durability: Acme's completely galvanized construction of heavy gauge steel and die formed structural panels provides extra strength, extreme rigidity, freedom from vibration and long trouble-free life.

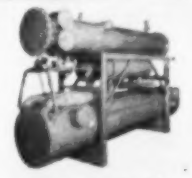
MODEL JCT
Capacities 3 to 10 tons. 7½ ton unit shown.

ACME INDUSTRIES, INC.
JACKSON, MICHIGAN
Mfgs. of a complete line of Air Conditioning and Refrigeration Equipment

Evaporative Condensers
Cooling Towers
Floor-type Unit Coolers

Direct Expansion (Dry-Ex) and Flooded Liquid Chillers
Heat Exchangers, Oil Separators

Shell and Tube, Shell and Coil Condensers
Receivers, Pipe Coils


Packaged Liquid Chillers to 225 tons

Flow-Temp Heat Pumps
Flow-Cold Liquid Chillers

Remote Room Conditioner

Continuously serving the refrigeration and air conditioning industry since 1919

Air Conditioned Gambling

Las Vegas Claims More Air Conditioning Per Inhabitant; Lush Hotels, Casinos Equipped

LAS VEGAS, Nev.—"Hot tips" receive a cool reception hereabouts because this city probably has more air conditioning per inhabitant than any other place in the world.

Much of it is concentrated in the fabulous Gold Strip, where seven plush hotels vie to attract tourists—to their gambling casinos.

Air conditioned comfort is one of the "baits." Lavishly furnished rooms, top-flight entertainment, private golf-courses, heated swimming pools, and excellent food—all at hard-to-believe moderate prices—are others.

Obviously, the hotels expect to make their profit in the gambling casinos— a strictly legal operation in Nevada and the principal source of income for Las Vegas residents.

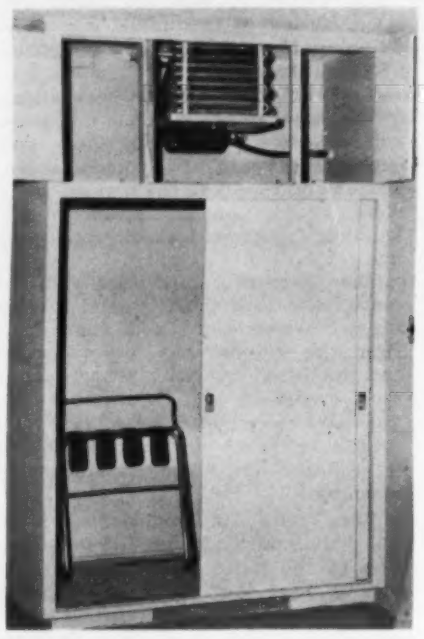
Newest hotel on the Strip—the Sands—was recently completed at a cost of $5,000,000, and each of its 220 rooms is conditioned by Drayer-Hanson "Spotaire HRC or VRC units using chilled or hot water, according to Sherman Singer of the company.

Other important hotels also using this equipment, he says, include the Flamingo, Thunderbird, and Desert Inn, and such tourist courts as the Pyramids and Colonial.

The first hotel was built on the Strip in 1942, and each succeeding one has tried to outdo its predecessor.

Two more are scheduled for this year, one costing an estimated $7,500,000, and other, $10,000,000.

Earlier hotels built here were air conditioned with central station systems, but according to Singer, "individuals constantly opened and closed windows which, in turn, drove maintenance engineers frantic trying to please everyone with one control.



DESPITE outside heat, guests of the Sands, one of the Gold Strip's lush hotels, adjust air conditioning individually. Panels removed to disclose unit in upper section. Return air below travels up rear wall of closet.

"Newer hotels," he says, "have all gone over to the Drayer-Hanson Spotaire units, both floor and ceiling mounted, using combinations of chilled and hot water. This gives an individual control to each room and if one customer likes it warmer or cooler, he can control his room without upsetting the complete system. Some of the hotels use thermostats while others use a three-speed fan switch."

Quietness of operation is another feature of these units cited by Singer.

"This, of course, is due in part to a centrifugal fan revolving at slow speed.

Indicative of the amount of refrigeration in Les Vegas is Singer's statement: "hotels all maintain servicemen, each controlling approximately 500 tons of refrigeration."

L. W. Driscoll Dies at 60; Headed Distributor Branch

CHARLOTTE, N. C.—L. W. Driscoll, southeastern manager of Driscoll Distributing Co., Inc., a branch of Tele King Corp., died here recently at the age of 60.

Driscoll founded L. W. Driscoll Co., Inc. in 1930 with the purchase of Southern Refrigeration Co. He represented General Electric in western North Carolina for 16 years and then distributed Monitor washing machines, Driscoll refrigerators, and other appliances.

Later, Driscoll was appointed a distributor for Tele King. In 1951, L. W. Driscoll Co. was dissolved and Driscoll became branch manager of Driscoll Distributing Co.

COMPACT DESIGN of machine room uses 50% less space to house five Schnacke 60-ton compressors. These provide 300 tons of air conditioning for the "Evansville Store," a self-serve department store.

Self-Service Department Store Uses 300-Ton System To Keep Merchandise, Customers Fresh

EVANSVILLE, Ind. — A 300-ton Schnacke year-round air conditioning system is an integral part of the "Evansville Store" recently opened here. This department store, one of 44 such stores operated by Interstate Stores, Inc., of New York City, employs a new method of merchandising called "Self Selection."

According to Walter O. Ossenfort, operating manager, this building was designed to "expose" its customers to the most goods under the most favorable conditions, with air conditioning a design "must."

Each of the 6 floors is divided into two zones, served by individual, suspended, airhandling units. These are supplied with chilled or heated water; this is piped to all floors and circulated at constant volume. Zone thermostats control the flow of water through the coils in the air handling units.

The hot water for heating, provided by city steam piped to a simple heat exchanger, is handled by separate pumps. All control circuits are interlocked to provide year-round controlled conditioning.

The refrigeration "cycle" supplies up to 300 tons of air conditioning via chilled water. Five 60-ton Schnacke compressors are piped to a common condenser, cooled by a roof-located water tower. The five Schnacke compressor units provide "integral unit" capacity control in steps of 20%.

The temperature of the water supplied by the multi-circuited dual chillers operates a potentiometer type thermostat. This in turn operates a step control that cuts in one to five compressors — as needed — with an interval delay of 30 seconds.

This delay, along with the Schnacke completely unloaded start, permits the handling of wide swings in load without objectionable power line surge. The cost of switch gear was greatly reduced by this system, according to William V. Mauer, Schnacke sales manager.

The "Machine Room" is a model of compactness, as it actually uses nearly 50% less space than was originally alloted to it. This extra space was released to the basement store for sales purpose.

George Lamb, Schnacke engineer, worked out the details of this installation, in conjunction with Chicago architect, Clarence L. Dahlquist, and Warner M. Pearson, manager of the Construction Div.

The compressor control circuits are set so that the "lead" compressor is rotated on a weekly basis to equalize operating hours.

The installed cost of the 300-ton, year-round system was about $500 per ton—this includes all pumps, heating, piping and duct work and an elaborate year-round control system that rivals the compressors in cost. The "cycle," with water chillers and condenser was installed for about $100 per ton.

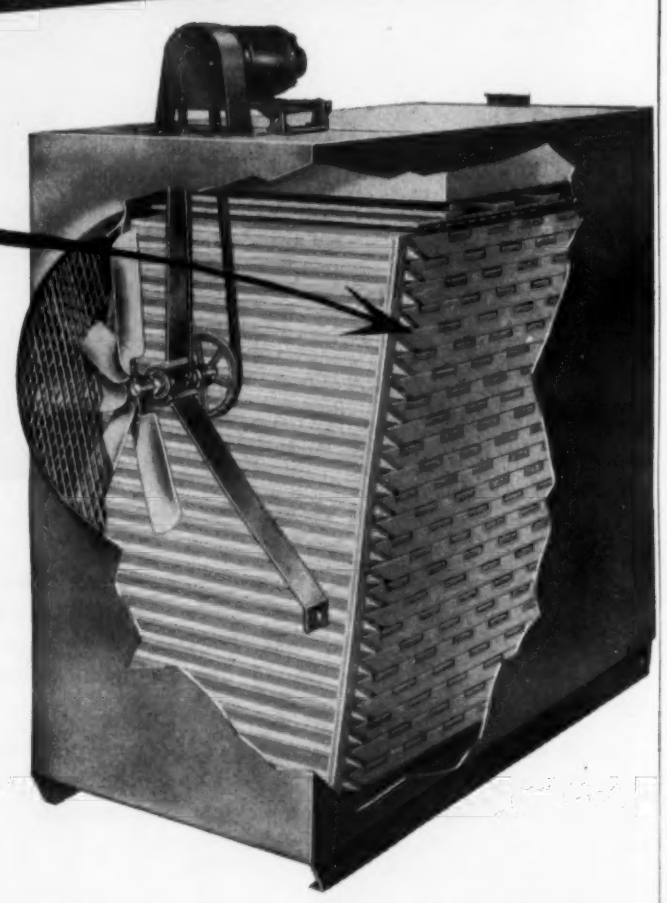
The Interstate Co.'s concept of mass merchandising by "Self Selection" is to induce people to linger longer—and expose themselves to more sales, (they claim 60—70% do stay longer).

Ossenfort stated that all of the six floors of the escalator-serviced sales areas are set up to display the maximum amount and variety of goods. Practically all physical barriers between customer and goods are removed. "Self Selection" is designed to let the customer "see it, feel it, taste it, try it." Customers are encouraged to "look them over" at their own convenience.

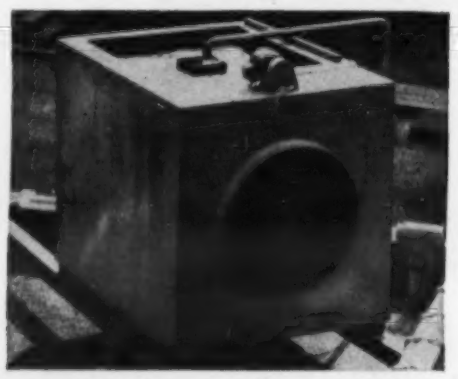
HALSTEAD & MITCHELL COOLING TOWERS

20-Year Guarantee!

On the Wetted Deck Surface of Koppers Pressure-Treated Wood



Here's the industry's greatest cooling tower value . . . "built like a battleship" for 20 years of foolproof performance. Halstead & Mitchell's pioneering in exclusive use of Koppers pressure-treated wood in the wetted deck surface makes possible the unprecedented 20-year guarantee against rotting, and provides the industry's most effective deterrent against fungi growth. Economical, lastworthy . . . the special H & M design for water distribution eliminates, thru the use of an efficient gravity-type distributing pan, extra pumping head required on spray type towers, also cuts down windage losses due to atomizing of water. The complete assembly is with Everdur bolts . . . disassembly is easy even after years of service. Easily accessible for cleaning through inlet on back of towers in all sizes.



MORE EFFICIENT IN ANY INSTALLATION

H&M # CT-4000 Induced-Draft Cooling Tower supplying the condensing water for 20 HP and 10 HP water-cooled condensing units in 3-story jewelry storeroom air conditioning. Note open-type distributing pan. This installation also has remote water basin in basement for year-round operation.

2 TONS to 100 TONS

A cooling tower for all applications, from 2 to 100-ton capacities—made by Halstead & Mitchell, one of the world's largest manufacturers of water-cooled Cleanable Condensers.

AT LEADING WHOLESALERS EVERYWHERE

Write for descriptive bulletin and information on engineering helps.

HOUSING—10 gage (⅛"+) sheet-steel case with 3 coats Bitumastic lining. Electrically welded cabinet. All bolts used are Everdur for ease of disassembly after years of service.

WATER DISTRIBUTION—Gravity type distributing pan eliminates extra pumping head, cuts down windage losses, due to atomizing water.

FAN AND DRIVE—Quiet-operating stainless steel 8-bladed fan, stainless steel shaft, chrome-dipped rust-proofed pulleys. Cast iron bearing supports. Adjustable belt tension.

HM Halstead & Mitchell

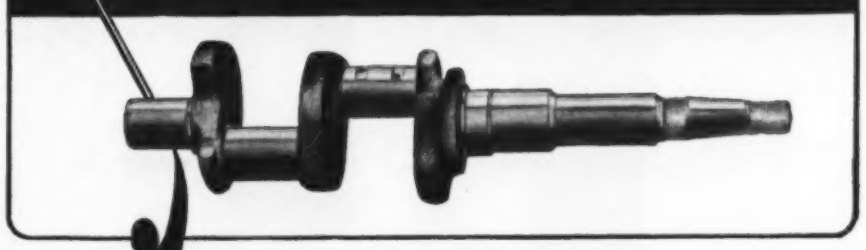
OFFICES: BESSEMER BUILDING • PITTSBURGH 22, PA.

A TYPHOON FRANCHISE IS PROFIT INSURANCE IN Air Conditioning

Air Conditioning Units 1½-20 tons
Multi-Packaged Systems Up to 60 tons
Prop-R-Temp Heat Pumps 2-20 tons
Evaporative Condensers
Packaged Water Chillers

TYPHOON AIR CONDITIONING CO., INC.
794 Union Street, Brooklyn 15, N. Y.

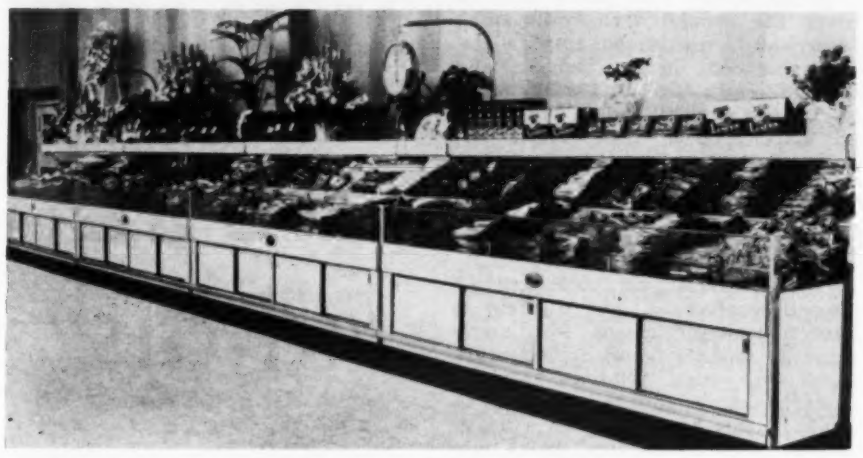
SINCE 1924... SHAFTS by MODERN



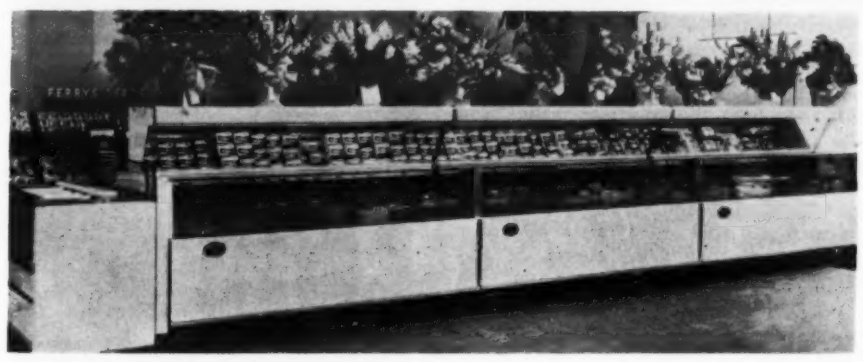
Shafts by Modern power compressors for the country's leading lines of commercial refrigeration. For precision SHAFTS, in quantity, consult...

Modern Machine Works, Inc.
Pioneer Shaft Manufacturers
5354 S. KIRKWOOD AVENUE
CUDAHY, WISCONSIN

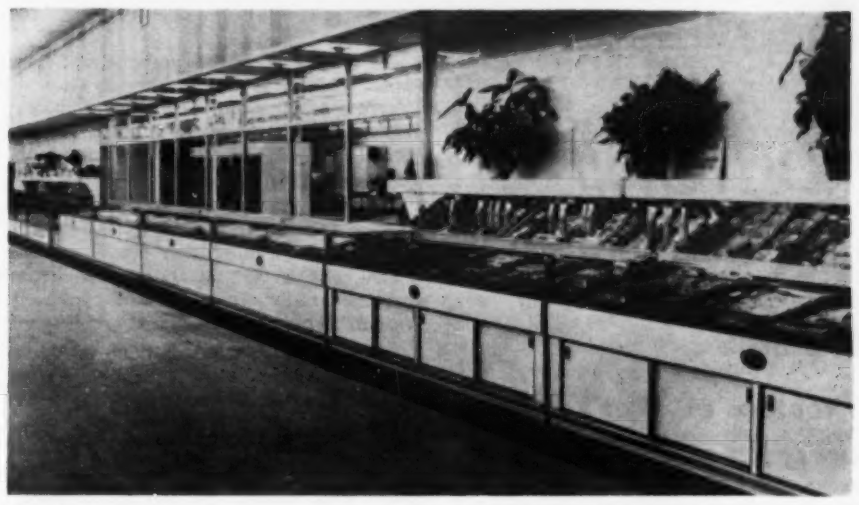
Commercial Refrigeration



VEGETABLE section of Arata Bros. supermarket in Sacramento, Calif., is shown above. After a recent fire the entire store was modernized and converted to self-service.



AFTER THE MODERNIZATION, which included this up-to-date frozen foods section, sales volume of the store increased 100%, according to the management.



PRIOR TO THE FIRE the meat section was equipped with service-type equipment. Now it has been modernized with the Sherer self-serve cases shown above. Note glass-front cutting room at far end of meat section.

Modern Self-Serve Refrigerated Cases Up Supermarket's Sales Volume 100%

SACRAMENTO, Calif. — A 100% increase in volume is attributed by Arata Bros. here to new, modern refrigerator equipment for self-service display.

Last November, the firm's supermarket at 34th St. and 3rd Ave. was entirely destroyed by fire. Cleaning up of the debris, rebuilding, and re-equipping the market for business took just four months so that the new market was opened for business on March 10, 1953.

The meat department was changed from service to complete self-service operation—and roughly 200 ft. of open, self-serve refrigerators make it easy for customers to shop in all departments for the individual food items displayed under the protection of refrigeration.

New shelving and gondolas are so located that wide aisles for customer traffic are one of the most noticeable things about the new market.

Andrew Arata reports that since the opening of the new store, volume sales are up around 100% from that obtained in the old market and that while this increase may level off somewhat as time goes on, he believes that most of the gain will be held.

Aside from the fact that the new market is easier to shop in, a contributing factor in the doubling of volume is that with the new Sherer self-serve cases, shoppers can serve themselves quicker than they were able to with the old-type service meat cases.

Charlie Rogers, western zone sales manager for Sherer-Gillett Co., worked with Arata Bros. in planning and equipping the new market, using miniature Sherer refrigerators and photographic layouts to arrive at a plan that would incorporate ease of shopping and maximum appeal.

Hardware for Commercial Refrigeration Catalogued

BROOKLYN—A catalog of hardware for the commercial refrigeration industry was published recently by the Kason Hardware Corp. here.

Divided into three sections, the 99-page book describes latches and hinges for walk-in and reach-in doors, latches and hinges for freezer and cold storage doors, and accessories and supplemental hardware.

A feature of catalog No. 52 is a quick-reference guide that helps locate Kason products required for particular refrigerator units.

Farrow Represents Federal Refrigerator In Southwest

WAUKESHA, Wis. — Federal Refrigerator Mfg. Co. has announced the appointment of W. T. Farrow as factory representative in the southwest, including the states of New Mexico and Arizona; southwestern Colorado and part of west Texas, including the cities of El Paso, Amarillo, and Lubbock.

W. T. Farrow

Active for over 25 years in the commercial refrigeration field in the area, Farrow will continue to maintain his headquarters at El Paso working with Federal dealers and distributors, chain store accounts, and other users of Federal equipment.

Chicago Ajax Distributes Selmix-Barmaster Line

CHICAGO—The Chicago Ajax Co. here has been appointed distributor for Selmix - Barmaster dispensing equipment for Cook county, W. C. Dunn, president of the company, and Arthur Freedman, national sales manager for Selmix, Inc., announced recently.

Chicago Ajax, which also distributes the Ajax Electric Iceman, is making plans to rent Selmix-Barmaster dispensing equipment to Chicago bars, Dunn said.

Features that spell value...

Grand Rapids Brass

Refrigerator Hardware

Whether for original equipment or replacement, Grand Rapids Brass locks and hinges provide a rugged, handsome finishing touch that spells quality and value. And they cost no more. That's why leading manufacturers and jobbers specify Grand Rapids Brass. You can be sure with any Grand Rapids Brass lock—when it trips . . . it grips!

THE ALL-NEW EDGEMOUNT LINE

THE EDGEMOUNT HINGE

THE EDGEMOUNT LOCK

The NEW, heavy-duty Edgemount Lock is chrome-plated, operates easily, installs quickly. Surface-mounting eliminates mortising of wood or stamping. Fully reversible lock mounts on either side of door, handle up or down. Strike adjustment 7/16" to 5/8".

Oil impregnated bronze bushings in this hinge provide two-way protection against tension and thrust. Requires no lubrication. A heavy-duty hinge.

THE POPULAR SURFACE-MOUNTED LINE

Reversible Lock

Reversible Hinge

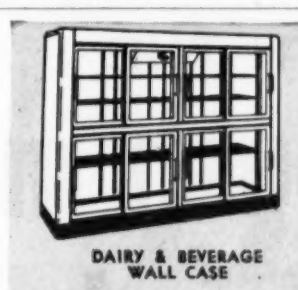
Write for Complete Illustrated Information

Grand Rapids Brass Company

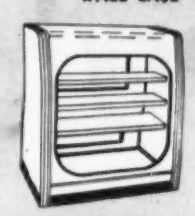
DIVISION OF CRAMPTON MANUFACTURING COMPANY

GRAND RAPIDS, MICHIGAN

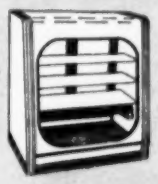
Suppliers to the Nation's Leading Automotive, Refrigeration and Plumbing Manufacturers



DAIRY & BEVERAGE WALL CASE

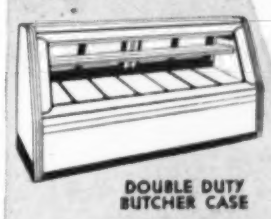


LOW TEMPERATURE FULL VISION DISPLAY



SPOTLIGHTER FULL VISION DISPLAY

FRONT SERVICE DISPLAY CASE



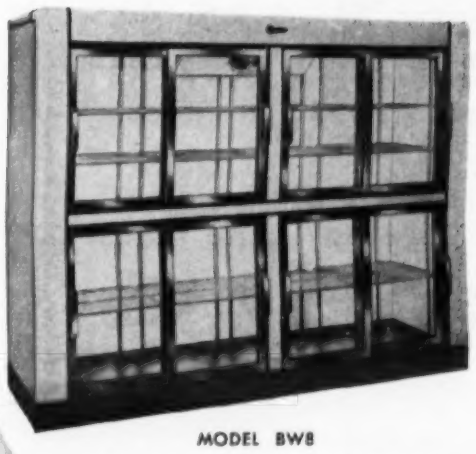
DOUBLE DUTY BUTCHER CASE

"MAKING SALES" IS NOT ENOUGH . . .

KEEP YOUR PROFITS UP WITH

COLDIN REFRIGERATORS

FEATURE THE LINE THAT GIVES YOU A SATISFACTORY MARGIN . . . PLUS FEATURES THAT MAKE CUSTOMERS BUY!



MODEL BW8

AVAILABLE IN 6, 8 & 10 FT. LENGTHS

ALL PURPOSE DAIRY & BEVERAGE WALL CASES

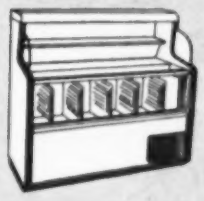
STRAIGHT FRONT AND SLANTED

An all-around display and storage wall case that's used many different ways. All welded steel construction, with gleaming white, acid resistant porcelain enamel. Smooth sliding doors have glass that cannot fog or film, in stainless steel frames with oversized KWIK-GRIP handles. Five display levels and strategically located fluorescent lighting.

DOUBLE DUTY DELICATESSEN CASE

FORMICA TOP COUNTER & DISPLAY CASE

COMMERCIAL STORAGE FREEZER



FROZEN FOOD MERCHANDISERS

ANGLE FROZEN FOOD MERCHANDISER

These days your operating costs are higher — so you need the higher profit. Coldin offers the bigger pay-off on every sale. Important, too, you need the selling advantages Coldin gives you . . . the Coldin reputation for quality . . . the more-for-the money features that clinch sales on your floor.

DEALERS — WRITE FOR CATALOG AND INFORMATION

Coldin NEW YORK

YOUR KEY TO BETTER REFRIGERATION

COLDIN CABINET CO. INC.

2800 Webster Ave., N. Y. 58, N. Y. • CYpress 5-3311

AIR CONDITIONING
(Year-Round Residential)

Vapor Problems

Home Air Conditioning Faces Problems of Wet Laundry, Boiled Dinners, Steamy Showers, Damp Crawl Spaces

BETHLEHEM, Pa.—"We're getting into a vapor problem with year-round residential air conditioning that we won't get out of easily," warns C. W. Nessell of Minneapolis-Honeywell Regulator Co.

Nessell called attention to this problem in a talk before the Technical Conference on Year-Round Residential Air Conditioning held by the Mechanical Engineering department of Lehigh university here recently.

Although disclaiming that "I don't know exactly what vapor is," he cited numerous instances where excessive moisture had become an acute problem in homes.

"There was a case many years ago, for example, where a woman wanted 50% relative humidity in her home year-round so she could raise flowers. We gave her the 50% r.h. all winter, but in spring all the plaster fell off the ceiling.

When investigated, we discovered that this high moisture level had resulted in ice forming above the plaster. When the ice melted, the plaster fell down.

"Any time a percentage of unburned products of combustion spill into a house, you'll have some sort of a vapor problem, and this happens oftener than you might think," Nessell said.

Another case of excessive moisture, this time in a house with hot water heat, resulted in many experts being called in to discover the cause. According to Nessell, it was an old-time plumber who insisted that he be allowed to stay with the family for several hours that came up with the answer finally.

BABY WASH WAS THE PROBLEM

"The plumber observed that the mother of the small baby in the house was intent upon keeping the baby spotlessly clean. This meant that a vast amount of the baby's laundry was done every morning and hung in the basement to dry. This, of course, caused excessive moisture in the house."

As chairman of the field investigation committee for the National Warm Air Heating Association, Nessell said he studied 15 homes in the southern part of the country last year.

"We found several vapor problems in air conditioned homes, including $25,000 homes built over crawl space. There are a lot of homes in this country built over crawl space," Nessell reminded the group.

"The contractors involved on this house told us simply that 'we're licked,' and the housewife, with tears in her eyes, said, 'we just can't live here anymore.'

"The moisture was so bad that there was mildew on the mattresses, the bedsprings were rusting, and the closets were filled with bags of silica gel in an attempt to prevent mold and mildew on clothing," Nessell declared.

"The dry bulb temperature was down where it belonged, and the size of the air conditioning unit was okay, but the relative humidity was up close to 70%. And the house smelled. Similar problems were also found in another house costing $150,000.

CRAWL SPACE WAS MUDDY

"First question I asked," Nessell explained, "was what is the condition of the crawl space? It was dry and powdery around the access door, but I didn't believe the space underneath the house was dry. So I crawled under it.

"When I came out I was covered with mud from head to foot. There were no actual puddles of water, but you could shove your hand into mud almost up to your wrist. The humidity in the crawl space, which was built, incidentally, to FHA standards, was so high, the needle went off the chart. It was above 95% r.h.

"The ground was wet because the owner watered his lawn constantly, and the moisture had migrated into the crawl space. Obviously, the moisture was coming up into the house from the crawl space.

"What to do? I suggested that we cover the ground with roll roofing from wall to wall in the crawl space. This was done in both houses, and when we came back two weeks later, the women were all smiles. There was no more mildew, the relative humidity had already dropped to 46%, and the humidity in the crawl space was about the same as outdoors.

MORNING SHOWERS GUILTY

"In residential air conditioning," Nessell emphasized, "we're going to have to look for unusual load conditions. In another house, for example, there was high relative humidity every morning until about noon. A study of this home revealed a heavy canvas shower curtain which absorbed much moisture during the morning showers and then gave it off to the air. The solution here was simple—a plastic shower curtain was substituted.

"A lot of moisture and heat gains in a house help the heating system, but they hurt the cooling system, and the capacity of the latter is limited. An ordinary kitchen range can put 40 to 50,000 B.t.u. into a house. A gas-fired kitchen range burning natural gas will put 11 gals. of water into the air per 1,000 cu. ft. of gas burned, and then all you have is a 2 or 3-ton unit.

PROBLEMS ARE HERE TO STAY

"We'll have problems with air conditioning because people are still going to wash baby clothes, take showers, and cook New England boiled dinners. I foresee a great future in this business of residential air conditioning, but we don't have an easy way ahead of us.

"We've got to educate the public as to the limitations of our equipment and maybe there'll have to be some changes in their way of living. Maybe we can convince them to cook their boiled dinners outdoors."

SERVEL CREATES DEMAND WITH THE

biggest advertising push in air conditioning history!

NOW! Complete home heating, cooling, air conditioning with one unit at a price almost anyone can afford!
Servel All-Year air conditioner at a new low price...
little more than the price of a heating system alone!
Gives you all seven air conditioning benefits
Servel
AIR CONDITIONING ✓ REFRIGERATION

Watch sellective Servel advertising in these publications reaching millions of prospective customers:

Time • Saturday Evening Post • Better Homes & Gardens
The American Home • House Beautiful • House & Garden
Sunset • House Beautiful Maintenance & Building Manual
House & Garden Book of Building • Small Homes Guide

• This is the year *All-Year* Air Conditioning comes into its own!

And Servel is building demand with the greatest advertising and merchandising push in air-conditioning history to tell *millions* about the benefits of year-round climate control and Servel's famous "no moving parts" design.

Riding the crest of the growing demand for residential air conditioning, Servel dealers will *cash in* on the Servel "Big Push." Get in on the ground floor right *now*. Servel has the advertising and merchandising tools for you to tie in with this national advertising program. Contact your Servel distributor or mail coupon.

Servel
the name to watch for great advances in
AIR CONDITIONING ✓ REFRIGERATION

SERVEL, INC., Dept. AC-5, Evansville 20, Indiana
Tell me more about the Servel "Big Push"—and rush information on tie-in advertising-merchandising.

Name_____
Firm_____
Address_____
City_____ State_____

Servel Booklet Tells of New 4th Dimension In The Modern Home

EVANSVILLE, Ind.—Build a house "as you like it" for comfort. That's the theme of the "Fourth Dimension of the Modern Home" booklet which is now being made available to the public by Servel, Inc.'s air conditioning division.

The 20-page four-color booklet points out that through air conditioning year-round comfort can be attained in a home's "fourth dimension"—"ideal indoor climate."

And, the booklet says, "You needn't be an Einstein to understand the Fourth Dimension—and you needn't be a Croesus to enjoy it."

Whether you're the daring or conservative type when it comes to building a home for yourself, air conditioning "will fit into your blueprint."

"Freedom of design," according to the booklet, emancipates the home builder from hidebound tradition and "'musts' of yesterday, such as cross-ventilation in every room. Remember, you're going to use the windows for light and view only.

"So place them high or place them low; place them all along one wall if you choose. Your house can be all glass, or solid masonry with no windows at all, if that's the kind of house you like . . . it's your house. You want it designed for living the way you want to live."

The booklet lists seven air conditioning functions that give the "Fourth Dimension": (1) heats in winter; (2) cools by refrigeration in summer; (3) cleans the air; (4) removes excess moisture on muggy days; (5) adds moisture on cold days; (6) circulates the air; (7) ventilates with outside air.

It is being mailed by Servel from Evansville, Ind. in answer to coupons clipped from the company's national magazine advertisements on the 3.3-ton All-Year air conditioner, which is priced at $1,395, delivered to distributor's city. Copies also will be distributed at company exhibits at conventions and home shows.

The booklet was designed jointly by Ross Roy, Inc. of Detroit, advertising agency for Servel's air conditioning division, and Coventry, Miller & Olzak of Chicago.

Air Conditioning

AT ITS BEST!

WITH

DOLE

"ICE-CELS"

COOL COMFORT!

For The Congregation of

HIGHLAND PARK METHODIST CHURCH

DALLAS, TEXAS

Installation of DOLE "Ice-Cel" Units in the basement of this church utilizes two 15 H.P. compressors . . . Provides 80 tons of refrigeration for two and one half hours—*or a total of 200 ton hours.*

DOLE "Ice-Cel" Units are available for low cost installation in churches, cafeterias, halls, mortuaries, offices and retail stores.

WRITE FOR CATALOG B

DOLE REFRIGERATING COMPANY
5920 N. Pulaski Road, Chicago 30, Ill.
103 Park Ave., New York 17
In Canada: Dole Refrigerating Products, Ltd.
44 Elgin Street, Brantford, Ontario

Maximum Refrigeration Efficiency
DOLE
"ICE-CEL" UNITS

Refrigeration Problems

and their solution

by Paul Reed

For Service and Installation Engineers

Paul Reed

A Two-Stage Ethane-'Freon-22' Freezer System

QUESTION:

We are figuring on the equipment needed to refrigerate an industrial low temperature freezer which is to be used to cool metal castings to -80° or below. The freezer must be able to hold 1,100 lbs. of castings immersed in a liquid bath.

Our plan is to use two units in cascade—the first charged with ethane and the second with "Freon-22." We plan on maintaining suction pressures of about zero gauge on both the ethane and "Freon-22" stages. The conditions are such that we prefer to use air-cooled condensing units.

Can you suggest what units are equipped for the use of ethane and "Freon-22?" Also, we would welcome any engineering suggestions relative to this freezer.

ANSWER:

To the best of our knowledge there are no small units on the market designed for the use of ethane. The demand for such units does not justify their manufacture; nor, in fact, would the demand justify factory conversion or modification of existing units for the use of ethane.

However, if you are careful in your design, you can use most of the standard compressors designed for one of the halocarbon refrigerants such as "Freon-12," "Freon-22," etc.

If you use a belt-driven compressor, you can, without difficulty, select a compressor, pulley ratio, and motor horsepower to give the necessary capacity. However, it would be somewhat more difficult to find a sealed motor-compressor with just the right displacement and horsepower ratio for ethane at the evaporator temperature and capacity that you need, although one ultra-low temperature cabinet on the market is using a standard "Freon-12" sealed motor-compressor with ethane.

USE A HEAVY MARK-UP

It is doubtful if any of the manufacturers of compressors or motor-compressors would recommend their units for use with ethane; nor would their warranties apply to their units used with ethane or any refrigerant other than the ones for which they were designed.

Therefore, you will be "on your own" and you must take this into consideration in establishing your price for the freezer that you are asked to build.

Low temperature systems are very "tricky," and that is putting it mildly. Little things that might be of negligible effect in a 35° job, can be disastrous in a -100° system. So be very careful, not only in designing, building, and installing this job, but also in pricing it.

There will probably be changes, call-backs, and service far beyond what you normally expect on most installations. If you simply double or even triple your estimated cost, you will probably lose money on this one job.

After you have built this one and perhaps another or so just like it, you can come closer to an accurate estimate. Also by that time you will have found and corrected most of the "bugs"; but the first unit or two will be unbelievably expensive.

In fact, you will probably be well advised to purchase a standard ultra-low temperature cabinet for your customer, and take your modest profit as a dealer. There are several manufacturers who specialize in ultra-low temperature equipment; that is, for temperatures of -60° F. and below. They have spent a great deal of time and money in the development, revision of their earlier designs, and on service on their earlier models, and are now able to furnish well engineered and well balanced systems that are dependable and are relatively inexpensive to service.

Even then, the cost of service for ultra-low temperature equipment can be expected to very considerably exceed the service costs of equipment of similar size and horsepower for temperatures of 0° F. and above.

-127.5° F. EVAPORATOR SHOULD NOT BE NECESSARY

But if you decide to design and build you own cabinet and other equipment for this job, you may wish to consider some of the following suggestions.

You give -80° as the temperature to which the castings are to be cooled. This probably refers to -80° F., but it could refer to -80° C., which is equivalent to -112° F. The following assumes a -80° F. temperature.

You also mention a suction pressure for the ethane stage of zero pounds gauge, which would mean an evaporator temperature of -127.5° F. This allows 47.5° temperature difference between the castings at -80° and the refrigerant temperature. This is much greater than necessary, and is undesirable.

On ultra-low temperature work, care should be taken to keep the temperature difference between the product and the refrigerant as low as possible, so as to operate at as high a suction pressure as possible. Just a few degrees difference in the evaporator temperature in the -100° region, can and will mean a big difference in the compressor, in the horsepower of its driving motor, and in the capacity and efficiency of the system.

Using a liquid bath, you should get good heat transfer from the castings to the refrigerant; so you should be able to operate on a 10° TD, or at most on a 15° TD. Thus, the evaporator temperature need not be below -90° or -95°.

(To Be Continued)

New Friedrich Distributor

LOUISVILLE, Ky.—Friedrich Refrigerator Co., San Antonio, Texas, has appointed Louisville Electric Mfg. Co., headed by John P. Castleman, as its Louisville distributor. The company will serve eastern Kentucky and southern Ohio.

Fred G. Krach Appointed Servel Purchasing Agent

EVANSVILLE, Ind. — Fred G. Krach has been appointed to the new position of purchasing agent in charge of raw materials at Servel, Inc. it was announced recently by S. L. Nicholson, vice president in charge of purchasing.

Fred G. Krach

The new position was created to concentrate all raw materials procurement in one section.

Krach had been assistant purchasing agent since November of 1951. He joined Servel in 1931 as a materials control clerk.

Nicholson also announced that Krach's staff would include Erwin F. Schmidt, buyer of forgings and castings; William A. Gallmeister, buyer of non-ferrous metals; and Jerry L. Tromly, buyer of ferrous metals.

Hollingsworth Represents McIntire In Three States

LIVINGSTON, N. J.—The McIntire Co., manufacturer of "DFN" driers, filters, and strainers, has appointed R. D. Hollingsworth as its district representative in the Ohio, Indiana, and Michigan area.

Hollingsworth has been identified with the refrigeration industry for over 16 years as supervisor of installation and maintenance in air conditioning, as well as commercial and low-temperature refrigeration.

M&E EST. 1866

CASE COILS AND FINNED TUBE PRODUCTS

★ Unit Coolers ★ Unit Heaters

WRITE FOR CATALOG

MERCHANT & EVANS CO.

PHILADELPHIA 46, PA.

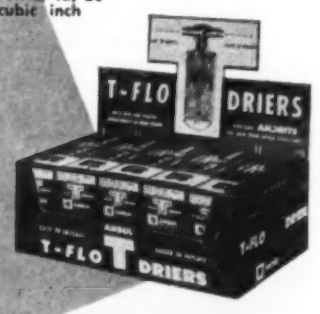
HIGHER EFFICIENCY • GREATER CAPACITY • FASTER PICKUP

THE NEW ANSUL T-*FLO* DRIER WITH ANDRITE

. . . is new in design, new in appearance and has new high performance ratings for efficiency, capacity and rate of moisture pickup.

It is easy to install and easier to replace.

Available in 8, 12, 20 and 30 cubic inch capacity.



ANDRITE

THE NEW *HIGH-SPEED* DESICCANT

• Causes less pressure drop • Will not plug • Will not channel • Will not break down • Is unaffected by temperature rise • Can be used with any refrigerant • Is non-corrosive • Removes acid

Buy Ansul T-*FLO* DRIERS where you see this attractive Ten-Drier Display Carton on your Refrigeration Wholesaler's counter

The T-*FLO* Drier with AN-*DRITE* climaxes 20 years of Ansul drier research.

ANSUL Chemical Company

REFRIGERATION DIVISION • MARINETTE, WISCONSIN

MANUFACTURERS OF REFRIGERANTS, REFRIGERATION PRODUCTS, INDUSTRIAL CHEMICALS, FINE CHEMICALS AND DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT • DISTRIBUTORS OF DU PONT "FREON" REFRIGERANTS

YOU PROFIT BY

Curtis EXPERIENCE

in 15 years

of Packaged Air Conditioning Pioneering

One of the First in the Industry

Curtis units that were installed back in the days when packaged air conditioning was a novelty are still giving faultless service. Today's Curtis packaged units are better than ever . . . perfected by 15 years of experience.

YOU'LL SELL more packaged units when you sell these Curtis advantages:

- Long life, slow speed operation
- Quiet and dependable
- 5 year warranty
- Easy installation
- Attractive, modern appearance
- Complete range of sizes — 2, 3, 5, 7½, 10 and 15 tons

Nationally Advertised in THE SATURDAY EVENING POST, TIME and NEWSWEEK.

For Full Information

MAIL THIS COUPON — WITH YOUR LETTERHEAD

CURTIS REFRIGERATING MACHINE DIVISION

of Curtis Manufacturing Company (Since 1854)

1912 Kienlen Avenue • St. Louis 20, Mo.

748

CURTIS REFRIGERATING MACHINE DIVISION
of Curtis Manufacturing Company
1912 Kienlen Avenue, St. Louis 20, Missouri

I am interested in direct factory franchise. Send complete details.

Company Name.....

Street.....

City..... Zone..... State.....

Signed.....

"You Can Depend on the Editorial Power of a Newspaper"

HOME FREEZER SPECIFICATIONS

May 25 Issue

Here's a *great* Sales Opportunity for HOME FREEZER MANUFACTURERS. *Help your dealers sell* by giving attractive, potent sales appeal to the specifications of your *entire* freezer line!

Look What YOUR Advertisement Will Accomplish!

- Promote *all* the important features of your *entire* freezer line. Tell your *complete* sales story!
- Highlight the exclusive, distinctive features of your entire freezer line. Sell the dealers on the outstanding merits of *your* freezers!
- Emphasize *all* the sales opportunities of your freezers. Convince dealers that your line is a *good* line to handle, a *profitable* line to handle!
- Explain what you've done to increase production, to improve the quality of your freezers!
- Explain your participating food plans, dealer aids, sales promotion program, your national consumer advertising program. Show the dealer what *you* do to help *him* sell!
- Prove to the industry that you are a firm "believer" in the future of the home freezer, that you are an active builder of the home freezer industry!

Yes, the May 25 HOME FREEZER SPECIFICATIONS Issue *does* provide a great sales opportunity for Home Freezer Manufacturers to do a complete, outstanding sales job! *For more effective, longer lasting results use dominant, EXTRA-SPACE, aggressive advertising to tell your complete freezer story . .. in the impressive way it should be told . . . in the annual issue that contains detailed comparative specifications on all major makes and models of home freezers!*

Write — phone — or wire — for data and mechanical requirements regarding insertions, spreads, etc., for these are the types of advertisements in the FREEZER SPECIFICATIONS ISSUE that really *pay-off*, and *pay-off* handsomely!

New York Office
521 Fifth Avenue
New York 17, N. Y.

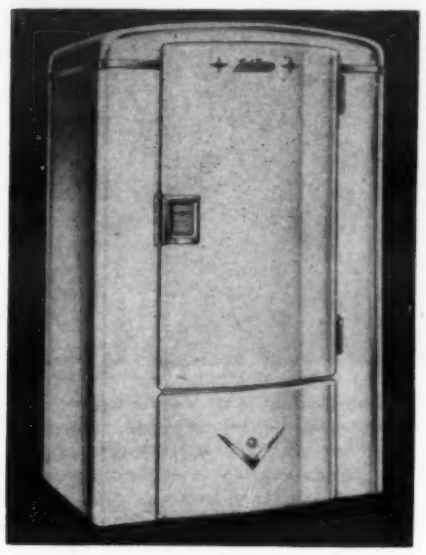
Chicago Office
134 South LaSalle St.
Chicago 3, Ill.

AIR CONDITIONING & REFRIGERATION ***News***

450 WEST FORT STREET DETROIT 26, MICHIGAN

Forms Close May 15

ABC ABP



Sub-Zero Upright Freezer Model 20

New Sub-Zero Line

(Concluded from Page 1, Column 3)

to provide any temperature required for pleasant living," it was reported.

The new freezers present a completely redesigned appearance—with golden trim and rounded tops and doors—and new capacities. Fifteen, 18.5, 20, and 25-cu. ft. cabinets are now coming off the line, and a new 12-cu. ft. model is planned.

The new plant, described as "a complete, modern production line set-up," has been erected near the present factory. Capacity of the two plants will be more than double previous production, the company said.

Kerotest Setup--

(Concluded from Page 1, Column 2)

a strong financial position and is considered a progressive organization in the printing machinery industry.

"We have been convinced that with our sales experience, employe relations program, and machining and assembly know-how, we can be of assistance to the Kerotest Co. and again make it a going concern. The Kerotest name and most of its people will remain. We hope to strengthen its organization, customer support, and service."

The Miller company, a wholly owned subsidiary of Commercial Credit Corp., is putting more than a million dollars into Kerotest. With dismissal of voluntary bankruptcy proceedings by the Federal District Court, checks for more than $700,000 were put in the mail to creditors.

The new management plans to continue production of Kerotest products for the refrigeration and petroleum industries, and also to continue with the firm's armament contracts.

New officers of Kerotest will be: R. B. Tullis, president; A. A. Saul, vice president; W. G. Young, vice president; W. G. Swaney, vice president and secretary; D. E. Edwards, treasurer and controller; and Hazel Gratz, assistant treasurer.

Young, who has been plant manager at Miller's north side plant, will move his headquarters to Kerotest.

ride the Tenney line!
AC4 4-Row Air Conditioning Coil
just one of our many units that really make money for you with easier, more dependable installations, and customers 100% satisfied!
Interested?
Talk it over with
Tenney
ENGINEERING, INCORPORATED
Dept. E, 26 Avenue B, Newark 5, New Jersey

New Glass Fiber Insulation Developed by Sealtite Corp.

WAUKESHA, Wis.—Sealtite Insulation Mfg. Corp. here has developed a new glass fiber insulation to be sold under the registered trademark of "Sealglas."

This product is manufactured of silica quartz and other minerals, blended to produce a chemically stable glass wool fiber which complies with Federal specifications.

This product is offered to the refrigeration industry in standard sizes, and is also custom cut to the exact requirements of the appliance manufacturer. It is bonded with a phenolic resin.

Acme's First-Quarter Sales Rise 52% Above Last Year

JACKSON, Mich. — Acme Industries, Inc. here reports that it is already beginning to feel the results of the new surge of consumer interest in air conditioning.

Information released by K. A. Weatherwax, Acme president, indicated that 1953 would be a banner year. Sales for the quarter ending March 31 were 52% higher than those of the same period in 1952. As of this date, April sales have more than doubled sales figures for the same month a year ago.

In a report to the board of directors, Weatherwax stated that even though production records are being broken regularly, the company's backlog of orders is at the highest mark in Acme's history.

Hotpoint Offers Accessory For Storing Biologicals

CHICAGO—In an effort to help retailers obtain extra sales in the refrigerator market, Hotpoint Co. has anounced a new series of shelf accessories to equip standard refrigerators for biological use.

The new activity will show retailers how they can exploit the laboratory and hospital fields where the necessity of storing biological products at controlled temperatures is of prime importance.

Hotpoint will supply sets of drawers to fit interiors of all 1953 refrigerator models plus some older models. These drawers are specifically designed for biological use.

Called "biologicool" inserts, they are constructed of chrome plated steel. The sides and bottoms of the drawers are perforated to allow for maximum air circulation.

Each drawer has a catch to prevent pulling out, which can be removed if desired. Inserts have rubber bumper feet to hold the unit in place, and to prevent marring the finish of the refrigerator liner.

When refrigerators equipped in this manner are used in laboratories, certain precautionary measures are sometimes necessary. If explosive materials are to be stored, Hotpoint recommends that the interior light and thermostat be disconnected and replaced by an exterior thermostat.

Calif. Legislature Hears of New Kind of Fair Trade Law

SACRAMENTO, Calif. — A "new kind" of a Fair Trade law has been introduced to the California legislature.

It would require a retailer to notify the manufacturer of a price-fixed product if the retailer knows the item is being sold at a reduced price in some other store.

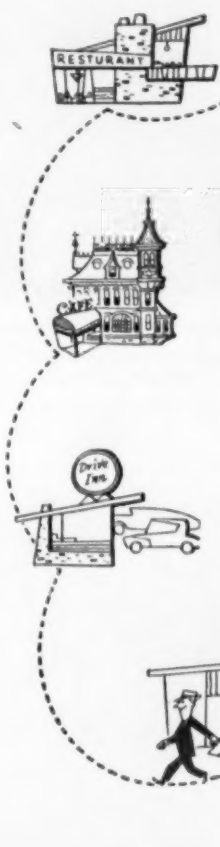
If the manufacturer fails to act against the price-cutting store within 15 days, the retailer making the protest may then reduce the price in his own store.

Most present fair trade laws bind all retailers to maintain a manufacturer's price or face a possible lawsuit.

Quinn To Head Engineering of Philco Refrigerators, Freezers

PHILADELPHIA — Philco Corp. has announced the appointment of Charles R. Quinn as manager of engineering for refrigerators and home freezers.

Quinn joined Philco in 1938 as chief draftsman for household refrigerators, freezers, and room air conditioning units. Previously, he was associated with Stewart-Warner Corp., and Fairbanks-Morse Co.

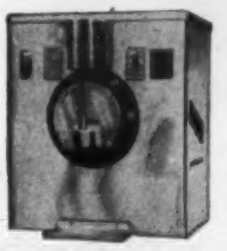


They're ALL hot prospects for the "SWEDEN METHOD"

Cash in NOW...sell the profit line

SWEDEN SPEED FREEZERS

Talk Profits... and your customers will sit up and take notice! We know, because we're talking "down-to-the-penny" margins in a nationwide promotion on the "SWEDEN METHOD" of automatic fountain operation. This profit story has excited fountain operators throughout the nation. It's a story of 50% reduced food cost . . . of 50% reduced labor costs. It means faster service, greater production per day, less employee fatigue—plus 50% increased gross profits. Cash in on this active operator interest . . . starting NOW! Sell the complete, amazing profit potential of automatic fountain operation. Your operator-customers know the full story from Sweden's nationwide advertising to the trade. They are interested . . . they want profits . . . get out and show them how to make more money . . . with SWEDEN SPEED FREEZERS!



THE SWEDEN LINE HAS EVERYTHING!

VARIETY—Models for every fountain requirement . . . in volume, in budget, in type of operation.

DESIGN—modern, sparkling beauty that stands out in any installation.

ENGINEERING—resulting from 20 years of leadership. Trouble-free use for your customers . . . and service-free sales for you.

For information on how you can cash in on the "Sweden Method" write today to:
SWEDEN FREEZER MANUFACTURING CO.
DEPT. S-3 SEATTLE 99, WASHINGTON

THE MASTER SERVICE MANUALS - - -

— — — and other books of the Refrigeration Library are depended upon as textbooks in trade schools from coast to coast.

BUSINESS NEWS PUBLISHING CO., DETROIT

FIRST IN ITS FIELD

½ HP MODEL SM 49

Servel SUPERMETIC

A-1 FEATURES that make SELLING EASIER, PROFITS SWEETER, when you SWITCH TO SERVEL . . .

- BUILT-IN LUBRICATION SYSTEM — protects every vital point — no manual oiling.
- OIL-FREE REFRIGERANT — no damaging oil "slugging."
- CUSHIONED QUIET — special mountings assure continued smooth operation.
- EXTRA-COMPACT — easy to install and check — saves valuable space.
- LOW-COST WARRANTY — with full factory-backing.
- WIDE LINE — models for every commercial refrigeration use — ¼ to 3 HP.
- OVER 100 AUTHORIZED WHOLESALE SUPPLIERS — service you want when you want it.

Sturdy, streamlined, light in weight — Servel's new SM49 fills a long-felt need in the store fixture and beverage fields. Here at last is a ½ HP single-cylinder, hermetically sealed medium temperature unit that is truly compact. Over-all height only 13⅜"; length 20⅞"; width 17". Net weight 105 lbs.; crated, 120 lbs. Furnished for either 115- or 230-volt, single phase, 60-cycle (115-volt furnished as standard). The same sound engineering . . . that for nearly a third of a century has made Servel products unequaled for long-lived dependability . . . will be found in this new unit in full measure. In every way, the new SM49* is first in its wide-range field! See your nearby Servel Authorized Wholesaler for full details, or write the factory *now*.

* Model SL49A, for low temperature applications, available on special order.

Servel

SERVEL, INC., ELECTRIC REFRIGERATION DIVISION
DEPT. A-52 • EVANSVILLE 20, INDIANA

THE NAME TO WATCH FOR GREAT ADVANCES IN REFRIGERATION AND AIR CONDITIONING

Exhibits at Educational Conference In Seattle

FACTORS IN THE OPERATION OF LARGER UNIT EQUIPMENT, such as this Brunner V-type compressor, are brought out in the exhibits. Visitors to the Brunner exhibit here are A. S. Jenkins, Seattle; Irene Slagel, Los Angeles; Charles Bell, Fresno, Calif.; Frank G. Slagel, Los Angeles; Art Johnson, Seattle.

DEMONSTRATING THE EFFECT OF MOTOR OVERLOADING and voltage fluctuations, and showing how present-day electric motors for refrigeration equipment operate under these and other conditions, Wagner Electric Corp. presented a special operating display setup at the Seattle conference.

HOW THE RE-EVAPORATOR FUNCTIONS in a hot gas defrosting cycle was demonstrated in the Bush Mfg. Co. exhibit. Left to right here are O. M. Butler, San Francisco; G. Catling, Vancouver, B. C.; and Harry Quinn, west coast manager for Bush.

IN EARNEST DISCUSSION with a visitor to the Seattle conference and exhibits is Chan Coombs (second from left), sales manager of Lehigh Mfg. Co., while in background other refrigeration men from the northwest part of the country look over the operating exhibit of Lehigh condensing units.

"INSIDES" OF A BIG REFRIGERATION SYSTEM VALVE is the object of study in the Henry Valve exhibit for (l. to r.) Ambrose Thomas, Seattle; Fay C. Snyder, Seattle, chairman of the Educational Conference and Exhibits; Ray McCahill, Henry Valve; and F. A. Seipps, Vancouver, B. C.

PROPER PLACEMENT OF A REFRIGERANT DRIER and other accessories in a refrigeration system was demonstrated in the Remco exhibit. Left to right here are Art Johnston, Remco; Harold L. Porr, Boise, Idaho; Merle Haynes, Remco; Bruce E. Carlson, Tacoma, Wash.; Joe Wakefield, Spokane, Wash.

DETAILS OF A NEW CONTROL DEVICE get the close attention of W. C. Irving (center) Santa Monica, Calif., and president of the California Association of RSES, in the Ranco exhibit as C. M. Spielman (left) of Ranco, A. W. Evans, Sandpoint, Idaho; Mrs. Irene Slagel, Los Angeles; and G. E. Graff of Ranco look on.

AN "ICE BANK" CONTROL SETUP was demonstrated in the White-Rodgers showing. Discussing some control problems here are Town Dewar and Bill Walsh, Seattle; D. O. Eggert, White-Rodgers; Ralph Schip, Roxie Middleton, and Jack W. Tupper, Seattle.

Biggest Bargain Ever Offered
TO OUR BIG INDUSTRY

Every phase of air conditioning and refrigeration selling—store layout, and display, financing, inexpensive advertising, dealing with manufacturers and distributors, selecting and getting the most out of salesmen, outwitting competition, making a profit on trade-ins and service, etc., etc.,—covered completely in a 638-page encyclopedia:

"BOTH FEET ON THE GROUND"

by GEORGE F. TAUBENECK

This book wasn't dreamed up—it was *lived*. Consists almost entirely of "case histories" drawn from interviews with dealers all over the country. All your questions answered by *successful appliance merchandisers* who have worked them out in practice. *Profit from the other fellow's experience!*

Price: $5.95—*ORDER FROM*

CONJURE HOUSE DIVISION

Business News Publishing Co.

450 WEST FORT ST., DETROIT 26, MICH.

5-11-53

Please send a copy of *Both Feet on the Ground.*

☐ $5.95 enclosed ☐ Send bill

Name .....

Address .....

.....

Subscribe Now

Receive the greatest trade paper in the Industry—AIR CONDITIONING & REFRIGERATION NEWS. Published every week. Brings you latest news and vital information on household refrigeration, commercial refrigeration, air conditioning, home freezers; manufacturing, distributing, retailing, servicing, and contracting. Only $5 per year, 52 issues.

Fill in coupon and mail today

AIR CONDITIONING & REFRIGERATION NEWS

450 West Fort Street, Detroit 26, Michigan

Gentlemen: Send the NEWS for one year.

☐ $5 enclosed ☐ Bill me ☐ Bill the company

Name.....

Company.....

Street.....

City.....Zone.....State.....

5-11-53

Government Contracts

PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request to the purchasing officer under which the purchase is listed in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date. This will save time in filling your request. For reasons of economy, specifications are normally not included with the bid invitations unless the specification is a new one. First time bidders on a particular item should request a copy of applicable specifications and drawings at the time the request for a bid is made.

It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Raritan Arsenal; Ordnance Ammunition Center, Joliet, Ill.; Rock Island Arsenal; Springfield Armory; Watertown Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices. Ordnance District Offices do not have information on any other purchases.

Invitations for Bids numbers will be followed by the letter "B." Requests for proposals or quotations will be indicated in this column by the letter "Q" or, if numbered, the number will be followed by the letter "Q."

DEPARTMENT OF DEFENSE

Description	Quantity	Invitation No.	Opening Date
Chicago Quartermaster Depot, Quartermaster Purchasing Div., Chicago, Illinois			
Refrigerators, prefabricated	307 ea.	53-1009B	12 May 53
Condensing units	307 ea.	53-1009B	12 May 53
Unit cooler, spec. MIL-R-0010137B (QMC)	307 ea.	53-1009B	12 May 53
Refrigerators	26 ea.	53-1008B	12 May 53
Condensing unit	26 ea.	53-1008B	12 May 53
Unit cooler, spec. MIL-R-0010137B (QMC)	108 ea.	53-1008B	12 May 53
Refrigerators	41 ea.	53-1007B	12 May 53
Condensing unit	46 ea.	53-1007B	12 May 53
Unit cooler	82 ea.	53-1007B	12 May 53
Directorate of Procurement & Production, Oklahoma City Air Materiel Area, Tinker Air Force Base, Oklahoma City, Oklahoma			
Invitation for Bid /B/ and Requests for Proposal /Q/ are distributed to firms listed in the Bidders List maintained by the above activity. A complete bid set is available for EXAMINATION ONLY by prospective bidders at the Air Regional Offices located in the local trading area of the above activity.			
Conversion of Ten Test Cells Buildings No. 214 and 215, Tinker Air Force Base, Oklahoma, City, Okla. This work includes heating and cooling.	Job	(34-601-55-575)	29 May 53
Public Works Office, Marine Barracks, Camp Lejeune, N. C.			
Condenser, pumps and auxiliaries.	Job	34140B	22 May 53
Induced draft cooling tower.	1	34141B	22 May 53
High pressure feed water heater and blow-down cooler.	Job	34143B	22 May 53
Bureau of Ships, Washington, D. C.			
Humidistats Human hair element wall type for tion on 110V 50 cycle single phase AC includes A controlling switch.	1926	(549-654-Q)	27 May 53

GENERAL SERVICES ADMINISTRATION

Description	Quantity	Reference No.	App. Bid Date
General Services Administration, 909 First Avenue, Seattle 4, Washington			
Commercial refrigerators, two and three door type, heavy gauge steel.	7 ea.	(SE-O-S-3218-1)	15 May 53
Business Service Center, General Services Administration, Region 5, 575 U. S. Courthouse, 219 S. Clark St., Chicago 4, Ill.			
Lexington, Ky. U.S.P.H. Serv. Hosp., air conditioning unit.	Job	C & R 778	21 May 53
Cincinnati, Ohio U.S.P.O. & Ct. Hse., repairs to #2 air conditioning system.	Job	C & R 783	21 May 53

CONTRACTS AWARDED THROUGH MAY 4

Ships Parts Control Center, Naval Supply Depot, Mechanicsburg, Pennsylvania

Air conditioning unit and installation.—1, $26,106.—The Dixon Co., Inc., 9 Center Place, Williamsport, Pa.

Repair parts for pumps and compressors.—11,626, $236,474.—Worthington Corp., 401 Worthington Ave., Harrison, N. J.

Repair parts for compressors.—2,402, $36,932.—Gardner Denver Co., 100 Williamson St., Quincy, Illinois.

Corps of Engineers, U. S. Army, North Atlantic Division, Philadelphia District, 121 N. Broad St., Philadelphia, Pa.

Dehumidifying units, including furnishing serviceman at sites of installation.—7, $30,198.—Cargoaire Engineering Corp., 6 Chestnut St., Abesbury, Mass.

Fan, air circulating floor type, adj. 8 ft. 115 V, 60 cycle, 1 phase, 2 speed, non-oscillating, metal blades, 30".—2,747, $181,336.—Robbins & Nyers, Inc., Fan Div., 387 S. Front St., Memphis 2, Tenn.

District Public Works Office, Twelfth Naval District, San Bruno, California

Air conditioning systems for Hospital Buildings H-73 and H-80 at the U. S. Naval Hospital, Mare Island, Vallejo, Calif. NOy-77172.—Job, $45,737.—Class Sheet Metal Co., 930 Tennessee St., Vallejo, California.

Headquarters, Air Materiel Command, Wright Patterson Air Force Base, Ohio

Temperature indicator PR-396303-Q.—3574 ea., $135,932.—Lewis Engineering Co., Naugatuck, Conn.

Temperature indicator.—2,527 ea., 2,654, ea., 1,143 ea., $277,994.—The Lewis Engineering Co., Naugatuck, Conn.

Evaporative Condensers

Their Selection, Installation, Maintenance

By John Engalitcheff, Jr., President, Baltimore Aircoil Co., Inc.

FLOAT VALVE

The float valve should be checked to see that it is operating satisfactorily at least once a year. The valve has a replaceable seat which should be checked once a year to see if it needs replacing. The water level should be maintained low enough so that the water does not run down the overflow. If the level is too low, the pump will suck air and will cause uneven loading on the pump motor as well as undue shock to the flexible coupling which connects the pump head to the pump motor.

When the pump is sucking air it can be diagnosed by an intermittent hissing sound coming from the spray nozzles. When this occurs, the water level should be raised.

The adjustment of the float valve to control the level at the desired height is accomplished by bending the float ball rod the proper amount.

CLEANING SPRAY NOZZLES

The spray nozzles should be kept clean at all times and should be inspected once each month on installations where the air contains considerable dust or dirt. If the spray nozzles are allowed to remain clogged, the sections of the condensing coil under them will operate in a semi-dry condition which will cause the coil to scale up in these areas thereby reducing its efficiency.

DRIVE-FAN SHAFT COLLARS

The drive should be inspected periodically to insure that:

(1) Belts are adjusted properly.

(2) Sheaves and collars are right on the shaft.

All B. A. C. condensers have considerably more belt capacity than required; consequently, it is not necessary to tighten the belts very tight in order to obtain proper operation. Excessive tightening puts undue strain on the bearings and should be avoided.

CHECKING SYSTEM FOR NON-CONDENSABLES

Pump-down the system slightly, sufficiently to assure that if any non-condensables are present they are pumped over to the high side. Immediately after pump-down, close the discharge valve on the compressor. Operate the evaporative condenser for at least ½ hour or until the water temperature in sump pan is the same as the entering w. b. temperature. The resultant temperature corresponding to the pressure in the evaporative condenser and connecting lines should correspond, or nearly so, to w. b. temperature of entering air.

If the resultant temperature is higher than the w. b. temperature by more than 2° then the system has an excessive amount of non-condensables. Purge the system in the customary manner from the highest point on the system. It may require several purgings before system is free of non-condensables. Remember, any differential between resultant temperature and w. b. temperature after the pump-down, as described above, is greatly augmented during operation.

PURGING THE SYSTEM

Pump-down the system as described above. Close the discharge valve on compressor. Operate the evaporative condenser for at least two hours, allowing non-condensables to separate and rise. Then bleed the non-condensables slowly through the purge valve. The longer the system is allowed to settle the better job of purging you will obtain.

Never purge the system while operating or before it has been allowed to settle as this will result only in a loss of refrigerant.

PAINTING

The casing of the evaporative condenser, the fan wheels and housings, the sump tank, and the eliminators should be painted thoroughly each year on both the inside and outside surfaces. In performing this, it is recommended that the metal be prepared for painting by thoroughly wire brushing the surface so as to remove any dirt or corrosion present. The recommended painting procedure consists of one coat of zinc chromate followed by one coat of aluminum lacquer.

The parts mentioned above are all galvanized but it must be remembered that where galvanize is in itself a good protection its value is greatly enhanced by painting in the proper manner as described above.

(The End)

MISSING SOMETHING?

More and better useful information is yours for the asking. See "What's New" page.

Houk Gets Westinghouse Consumer Products Post

PITTSBURGH — Appointment of L. S. Houk as manager of manufacturing for consumer products of Westinghouse Electric Corp. has been announced.

Houk's post is a newly-created one. He will be responsible for manufacturing functions throughout the company's consumer products divisions.

Graduated from the University of Michigan in 1922 as a mechanical engineer, Houk joined Westinghouse in 1929.

On Jan. 1, 1949, he was appointed director of building construction and maintenance for the Headquarters Mfg. Div. and earlier this year was named director of works engineering.

McQuay Appoints Tennity To Southwestern Territory

MINNEAPOLIS—H. Blake Thomas, vice president in charge of sales of McQuay, Inc., manufacturer of heating, air conditioning, and commercial refrigeration equipment, announces the appointment of William Tennity of William Tennity & Co., Los Angeles, as the new heating and air conditioning representative for McQuay in the southwestern territory. He has been in the field 12 years.

William Tennity

ASRE Honors Six Visiting Overseas Representatives

NEW YORK CITY — Associate memberships in the American Society of Refrigerating Engineers were given to six foreign refrigeration representatives while the group was on a recent five-week, 4,000-mile tour of U. S. factories to observe latest developments.

The visitors, who represent Ad. Auriema, Inc., exporter of refrigeration equipment, were Mario R. Aguilar, Mexico City, Mexico; Leopoldo Brandt, Buenos Aires, Argentina; J. Augusto Gerlinger, Sao Paulo, Brazil; Andres Lara Saenz, Madrid, Spain; Guillermo Lucas Roya, Havana, Cuba; and Angel Mokuvos, Montevideo, Uruguay.

...and one was just right!

Like Goldilock's porridge — refrigeration temperatures must be neither too warm nor too cool. Your customers expect just right results, and they'll get them with Ranco. Controls by Ranco serve in more than 50,000,000 installations throughout the world — positive proof that Ranco is preferred . . . Choose dependable Ranco controls yourself — available for over 4,000 replacement installations.

Ranco Inc.
COLUMBUS 1, OHIO
WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $5.00 per insertion. Limit 50 words. 10¢ per word over 50.

RATES for all other classifications $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count. Please send payment with order.

POSITIONS AVAILABLE

COMMERCIAL REFRIGERATION and air conditioning service man with at least 5 years' experience, wanted by York Distributor. Year-round position and good salary to man who can qualify. Ideal climate and good living conditions in a fast growing section of the South. C. E. ROTH REFRIGERATION ENGINEERS, 638 North "O" St., Pensacola, Fla.

CHIEF ENGINEER. Nationally known manufacturer seeks top level air conditioning engineer capable of assuming full charge of department in the manufacture of room air conditioning units. This position offers high salary and exceptional opportunity to the right man. Replies will be strictly confidential. State full details indicating experience, salary requirements, and availability. BOX 4296, Air Conditioning & Refrigeration News.

MANUFACTURER OF environmental cabinets has opening for Low Temp. Engineer on salary or profit sharing basis. Replies confidential. BOX 4299, Air Conditioning & Refrigeration News.

EXPERIENCED REFRIGERATION engineers. A progressive Midwestern manufacturer, well established, has openings for graduate Refrigeration Engineers experienced and well qualified in portable air conditioning units, development and test. Also a metal shop head who can handle men and produce samples of all types of refrigeration appliances. Submit a resume of your education, experiences and complete background. State your salary requirements. Interviews will be arranged. BOX 4300, Air Conditioning & Refrigeration News.

MFR'S AGENTS for Detroit, Cleveland, Pittsburgh and Washington areas for established manufacturer of special-purpose, industrial, sub-zero systems for research, testing, processing. Capable of intelligent preliminary analysis of problems. Deal with top technical personnel. Should now be working with industrial and laboratory users. Give full details including area served and present lines. BOX 4301, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

FOR SALE: Six—6 plate (12" x 108") Dole Freon 12 Plate Banks in excellent condition. Must be moved at once, now located in Wauwassee Locker plant, Syracuse, Indiana. Make us an offer. Contact Mr. Andrews at ADISCO, INC., or Mrs. Robinson, 306 Columbia St., South Bend, Indiana. Phone 71549. Man will be at plant week starting May 4th.

FOR SALE Paint System—2 coat, 1 bake —5 stage spray Bonderite—Dry off oven—spray booth—(Water Curtains)—Bake oven—conveyor and drives. This equipment may be seen in operation. Detailed information may be obtained upon inquiry to Production Dept., AMANA REFRIGERATION, INC., Amana, Iowa.

SOFT ICE CREAM freezers—continuous process for popular money-making "softies." One new at half wholesale, two used at rock-bottom prices. These are fine machines, famous make. Have to devote all my time to different business so must close out. Write P. J. BERNHEIM, 2324 Humbolt Avenue, El Cerrito 9, California.

NEW UPRIGHT freezer—21 cubic feet; over 700 lb. capacity; Modern design; gleaming white exterior; extra-quick freezing with freezer plate shelves. Complete with ⅓ h.p. Chieftain sealed unit self-contained: Ranco Temperature Control; F-22 Gas. Dealer Price $349.00. Special discount for quantity. GENERAL REFRIGERATORS CORP., 2011 First Ave., N.Y.C. ENright 9-0200.

DISTRIBUTORS, WHOLESALERS wanted. Sensational Air conditioner condensate disposal unit 9 inches high, eleven wide, 4½ thick. Complete tank pump float and check valve. Pumps to a 12 foot head, 46 gallons at 10 ft. Outstanding patent features makes K40 the greatest value on the market. List $50, retails 20% off, 220 volt, add $3.90. KESCO PRODUCTS CORP., 115-31 Sutphin Blvd., Jamaica 4, N. Y.

CHEVROLET ADVANCE-DESIGN TRUCKS

Famous for Their Saving Ways

—and here are 4 Powerful Reasons why!

EXTRA POWER! How can extra power save you money? The high-compression power (7.1 to 1 ratio) of Chevrolet's Loadmaster engines in heavy-duty trucks means extra power and extra miles from each gallon of gas. Chevrolet's Thriftmaster engine in light- and medium-duty models has long been known for economy of operation.

EXTRA STAMINA! Heavier, stronger construction throughout, more rigid frames! Now, Chevrolet trucks are sturdier and tougher than they have ever been in the past—better able to handle the roughest jobs day after day, months on end. Such outstanding stamina is one more factor—and an important one—in reducing your hauling costs.

MATCHED TO THE JOB, TOO! Every Chevrolet truck is carefully engineered and *factory-matched* to the job it will do. You don't buy too big a truck. You don't buy too small a truck. You get a truck with every unit matched and balanced to the work it will do—and that saves you money, too.

EXTRA OVER-ALL ECONOMY! Many things contribute to lower hauling costs with Chevrolet. But, few are as welcome news to buyers as the fact that Chevrolet trucks list for less than any other truck of comparable size and capacity. See your Chevrolet dealer. Chevrolet Division of General Motors, Detroit 2, Michigan.

CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

TWO GREAT VALVE-IN-HEAD ENGINES—the Loadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load. **POWER-JET CARBURETOR**—for smooth, quick acceleration response. **DIAPHRAGM SPRING CLUTCH**—for easy-action engagement. **SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **HYPOID REAR AXLE**—for dependability and long life. **TORQUE-ACTION BRAKES**—on light-duty and medium-duty models and on front of heavy-duty models. **TWIN-ACTION REAR BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—for greater holding ability on heavy-duty models. **CAB SEAT**—with double deck springs for complete riding comfort. **VENTI-PANES**—for improved cab ventilation. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—for easier handling. **UNIT-DESIGNED BODIES**—for greater load protection. **ADVANCE-DESIGN STYLING**—for increased comfort and modern appearance.

CHEVROLET first in demand in value in sales

'Fortune' Looks at Air Conditioning Boom--

(Concluded from Page 1, Column 3)

business. That industry is the air conditioning industry. And what a free-for-all it is turning out to be!

"The industry's over-all retail sales in 1952 are commonly reckoned at $1.25 billion, but the figure includes not only engineering and ductwork expenses on the big jobs but nearly $100 millon worth of ice makers, freezers, frozen food cabinets, and Coke dispensers. Cloud Wampler, chairman and president of Carrier Corp., estimates that 1953's volume will reach $1.75 billion at retail. If it does, sales of house, room, and other packaged air conditioners, mostly for residential use, should rise to a third of true air conditioning sales."

The following are some of *Fortune's* comments about the room air conditioner business:

"Perhaps 75% of the room units, the industry goes on to argue, are now going into residences, and people of nearly all income groups are buying them. The rump of a room conditioner bulging out of the window is becoming as unexclusive a social symbol as the television aerial overhead.

Regional Sales Pattern Termed Deceptive

"Moreover, the 1952 regional sales pattern, which was heavily concentrated in the South, is deceptive, for the demand began in the South and supply was exhausted long before the North's demand could be met. (For that matter, supply was exhausted in the South, too, long before demand was satisfied.) Carrier's buying-power indexes, adjusted for climate, indicate that the North is a better market than it seemed to be even in 1952.

"The industry is not merely talking, it is staking hundreds of millions of dollars on its argument. Every manufacturer remembers that he could have sold last year twice as many room air conditioners as he did sell, and every manufacturer, recalling how he failed to order the parts and materials to keep his lines working all summer, appears determined not to be 'caught again with his plants down.' It surely looks as if nobody would repeat **that** mistake. Predictions of 1953 sales range between 450,000 and 700,000 units. But at least 65 different companies are 'manufacturing' room air conditioners, and their combined planned production seems about twice their own top estimates of industry sales.

About 20 Genuine Producers

"First of all, can the industry **make** even a million room air conditioners? Many 'manufacturers' like RCA Victor, Hotpoint, and Admiral do not produce them at all (yet) but buy the works from other producers. There are about 20 genuine producers, and they, in turn, are more or less dependent upon manufacturers of parts and components such as motors, condensers, evaporators, and compressors.

"Since all these items are in short supply, the industry probably will not be able to build a million room conditioners this year. But it may come closer than many sideline experts are willing to predict, simply because its resources are greater than many realize. A good example of the kind of resources at its command is the 23-year-old Tecumseh Products Co. of Tecumseh, Mich., which specializes in compressors. Although Tecumseh made 2,556,000 compressors last year, it may well turn out more than 3,500,000 in 1953. It is a splendid example of the aggressive, efficient, volume-minded supplier. . . . Manifestly, one reason why people tend to buy new products faster than they did years ago is that industry can get them into production faster, and can make and sell them faster. . . .

". . . The room-conditioner industry today is a nearly perfect example of classical competition, that is, many companies selling the same product, with no seller large enough to control prices, which are regulated by supply and demand. What keeps the industry from being a perfect example is that its members, like most competitors in real life, are breaking their necks trying **not** to turn out the same product.

Some Units Warm Air

"At least four companies—Philco, York, Mitchell, and Remington—are turning out machines that warm the air on cool days as well as chill it on hot days. . . .

". . . The room-conditioner business, compared with the motorcar or household-refrigerator business at a comparable stage, is remarkably efficient because it buys most of its important components from the well-established refrigeration industry, whose suppliers also have achieved an admirable efficiency. Moreover, the industry has already reduced prices. A ½-ton room window conditioner retailed for about $200 in 1941; today a much better machine sells for $330, or about $180 in terms of 1941 prices."

In turning its attention to complete home or "residential" type comfort cooling systems, *Fortune* says, in part:

Central Residential System Even More Promising

"Even more promising, according to a majority of the air conditioning people, is the central residential system installed either in older houses with warm-air systems or in new houses as part of a 'year-round air conditioning' unit. It does for a house what five or six room coolers cannot do; costs about half per ton of cooling power, provides automatic control, is much less noisy, affords better air distribution, and doesn't 'look like hell sitting in your windows.' It also has a welcome 'sales stability'; a consumer buys it not to protect himself from the heat wave that began last night, but to provide filtered, dehumidified, and tempered air for the life of his house.

"Now central home air conditioning has suddenly begun to boom. Perhaps the most important reason, aside from the recent increase in home ownership, is that today's small house, with its sealed picture windows and low roof, is a TV-equipped hotbox that both demands and lends itself economically to a cooling system.

"Another reason is that speculative builders have discovered the virtues of air conditioning: it makes for construction savings by eliminating the need for cross ventilation, attic fans, extra corners, and a full complement of screens. More important, the advantages of air conditioning to the houseowner—not only comfort but reduced cleaning and decorating costs, healthier atmosphere—are enabling the builder to sell houses.

1953 Output May Hit 75,000 Units

"Last year sales of central residential units, for both new and old houses, came to about 20,000 units, worth, say, $40 million or more installed. Production for 1953 may be as much as 75,000:

Carrier	14,000
Servel	7,000
G-E	7,000
Bryant	6,000
Airtemp	5,000
York	5,000
Lennox	4,000
Coleman	3,500
Typhoon	3,000
Westinghouse	2,500
Mueller	2,000
Others	16,000
	75,000
Heat pumps	5,000
	80,000

"One of the major technical problems of the central air conditioner is that at present most units of two tons and upwards are water cooled, and most units are rated at two tons or more. Since a 3-hp. water-cooled unit consumes about 3,000 gals. of water per day, the water is costly, and its use on that scale may not be allowed by the town or city supplying it.

"The conventional solution has been a water tower—a small copy of the water coolers atop large buildings—costing upwards of $200. Airtemp has in production a water-cooling device that consists of two auto radiators with motor and fans that remove the heat from the water exactly as it is removed in an auto radiator. Coleman uses neither tower nor separate cooler, but a device using a water-projected fog. . . .

Where Heat-Pump Fits

"The central-heat-pump system is essentially a larger version of the reverse-cycle room cooler, previously discussed. It has many advantages. It uses nothing but electricity and air or water—no oil, no gas, no chimney, no fuel tank. Its operating cost, where electricity sells for less than 2 cents a kilowatt-hour, need not be unduly high.

"It has two great disadvantages, however. It is expensive to install, and unless an adequate supply of water is close at hand, or the outside temperature seldom falls below 30°, it is too bulky and too costly to operate.

"Nevertheless it seems to satisfy many houseowners in the Southeast, West, and Southwest, and if utility companies make rates to encourage it, and if and when its price comes down, it may enjoy a boom of its own.

"Expense, particularly the initial cost, is perhaps the greatest problem of the central-residential-conditioning business. A recent survey by James M. Fitch in *House Beautiful* showed total cooling costs, including amortization, interest, and operating costs, ranging from 10 to 19.3 cents a sq. ft. of floor space a year, depending on location, etc.

"A $1,400 unit in a 1,500-sq. ft. house (worth, say, $18,000) thus would cost between $150 and $300 a year, which is fairly heavy burden for the owner of an $18,000 house. FHA and VA both insist that a man who wants to buy an air conditioned house must earn a higher income than one buying the same house unconditioned. The mass market, about 80% of the total, consists of houses costing $15,000 and less. The market can be sold only if cost of the installed cooling system is less than 10% of the cost of the house.

"Thanks to competition, manufacturers have reduced prices, and doubtless will reduce them still further. 'But what's killing the business,' says one builder, 'is all the extra cost after the unit leaves the factory.' Every manufacturer fervently agrees.

"The trouble, it seems, is the heating contractor and the complexity of the installation. Like the master plumber, the heating contractor regards himself as a professional man rather than as a commercial animal. And as a salesman, the saying goes, he is often 'all back and no front.' How to convert him from a 'professional man' into a go-getting, volume-minded, price-shaving competitor?

"Many industry men argue that no more than 5% of the industrial, commercial, and office potential has been sold. The validity of such a statement depends, of course, on one's definition of potential. But patently the prospects are enormous, and sales should come easier and increase faster. For just as air-conditioned theatres, department stores, and other public places helped pave the way for residential air conditioning will probably result in demand for more commercial and industrial installations."

How Sales of Some Leading Producers Have Jumped

	Net Sales (millions) 1949	Net Sales (millions) 1952	Net Profit (millions) 1949	Net Profit (millions) 1952	Common Stock 1-'49 to 3-'53 Low	Common Stock 1-'49 to 3-'53 High
Carrier	$46.2	$107.7	$1.8	$4.5	*12½	45¼
York	50.0	59.2	1.6	2.5	8	23⅛
Trane	24.2	50.0	1.7	2.3	*10	37¼
Tecumseh	37.0	93.5	2.1	3.3	* 8⅝	72
Copeland	9.7	14.1	.45	.5	2¾	11⅝
Fedders-Quigan†	28.0	34.9	1.8	1.2	11⅛	29⅞
Remington†	.7	3.2	.18	.64	5	11¼
Acme	2.0	5.0	(.28)	.15	1	5⅞
Brunner	5.7	8.4	.25	.09	4¼	8⅜
Servel	41.2	99.5	(.64)	1.7	6¼	14⅜
Coleman	23.9	40.3	1.1	2.3	15¼	33
Mueller	7.1	9.8	.5	.33	* 6	30
Affiliated Gas (Bryant)	30.9	55.0	1.7	1.8	5⅝	13⅝

†Fedders-Quigan 1952 figures for 11 months; Remington 1949 figures for 10 months.

*These companies issued stock dividends: Carrier, 10% in 1951; Trane, 100% in 1951; Tecumseh, 300% in 1949; Mueller, 200% in 1949.

—Table from May issue, *Fortune* magazine.

● ● ● **A TUBE OF KNOWN QUALITY** is the all-important factor in reaching top production peaks. Penn tubing has held the title of 'constant quality' for over a quarter of a century. Carefully inspected to detect any flaws or impurities which might hinder production or cause rejections, Penn tubing nets greater output and gains a point for your side.

You can depend on Penn for *first* quality—for installations that are right the *first* time. Take advantage of Penn's knowledge and experience in helping you choose the right type of tubing for your needs.

Write for new specification literature and send along your tubing problems—Penn is always ready to serve. You need *first quality tubing* to make production soar—you need PENN.

QUALITY TUBING HAS A "PENN NAME"

PENN BRASS & COPPER COMPANY

ERIE • PENNSYLVANIA • TELEPHONE 3-1164

Genuine Joe says:
"Send for this FREE Bulletin"

Write for Catalog MU-40 . . . Every repair shop needs one. It helps determine the catalog number and price of Wagner Motor Parts.

MU-40

Wagner Electric Corporation

6471 PLYMOUTH AVENUE, SAINT LOUIS 14, MO., U. S. A.